ORDER NO. HAD85052534C0
A2

Service Manual

Cassette Deck

RS-B55
RS-955

dbx*/Dolby B-C NR
Stereo Cassette Deck

** DOLBY B·C NR

Color

(K)... Black Type
(S)... Silver Type

Color	Area
(K)	[M] ..... U.S.A. (RS-955)
(K) (S)	[E] ..... All European areas except United Kingdom. (RS-B55)
(K) (S)	[EK] .... United Kingdom. (RS-B55)
(K) (S)	[EH] .... Holland. (RS-B55)
(K) (S)	[EGA] .. F.R.Germany. (RS-B55)
(K) (S)	[XA] .... Asia, Latin America, Middle East and Africa. (RS-B55)
(K) (S)	[XL] .... Australia. (RS-B55)

- The photographs show RS-955 model.
- The function and operating method of RS-955 are the same as for RS-B55.

RS-B55 MECHANISM SERIES (For U.S.A.)
RS-B25 MECHANISM SERIES (For other areas.)

SPECIFICATIONS

Deck system	Stereo cassette deck
Track system	4-track, 2-channel
Heads REC/PLAY	AX (Amorphous) head
Erasing	Double-gap ferrite head
Motor	1 motor
Recording system	AC bias
Bias frequency	80 kHz
Erasing system	AC bias
Tape speed	4.8 cm/sec. (1⅞ ips)
Frequency response	
Metal	20 Hz~19,000 Hz 30 Hz~18,000 Hz (DIN) 40 Hz~17,000 Hz ±3 dB
CrO_2	20 Hz~18,000 Hz 30 Hz~17,000 Hz (DIN) 40 Hz~16,000 Hz ±3 dB
Normal	20 Hz~17,000 Hz 30 Hz~16,000 Hz (DIN) 40 Hz~15,000 Hz ±3 dB
Dynamic Range (with dbx in)	110 dB (1 kHz)
S/N (signal level=max. recording level, CrO_2 type tape)	
dbx in	92 dB (A weighted)
Dolby C NR in	75 dB (CCIR)
Dolby B NR in	67 dB (CCIR)
NR out	57 dB (A weighted)

Wow and flutter	0.07% (WRMS) ±0.13% (DIN)
Max. Input Level Improvement (with dbx in)	10 dB (1 kHz)
Fast Forward and Rewind Time	Approx. 90 seconds with C-60 cassette tape
Input sensitivity and impedance	
MIC	0.25 mV/400Ω–10 kΩ
LINE	60 mV/47 kΩ
Output voltage and impedance	
LINE	400 mV/1.5 kΩ
HEADPHONES	80 mV/8Ω
Power consumption	18 W
Power supply	[M] ..... AC; 120V, 60 Hz [E][EH][EGA] ..... AC; 220V, 50 Hz/60 Hz [EK][XA][XL] ..... AC; 110V/127V/220V/240V, 50 Hz/60 Hz Preset power voltage 240V
Dimensions (W×H×D)	430×99.5×229 mm (16-29/32"×3-29/32"×9")
Weight	3.5 kg (7 lbs 11 oz)

Design and specifications are subject to change without notice.
* The term dbx is a registered trademark of dbx Inc.
** 'Dolby' and double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

Technics

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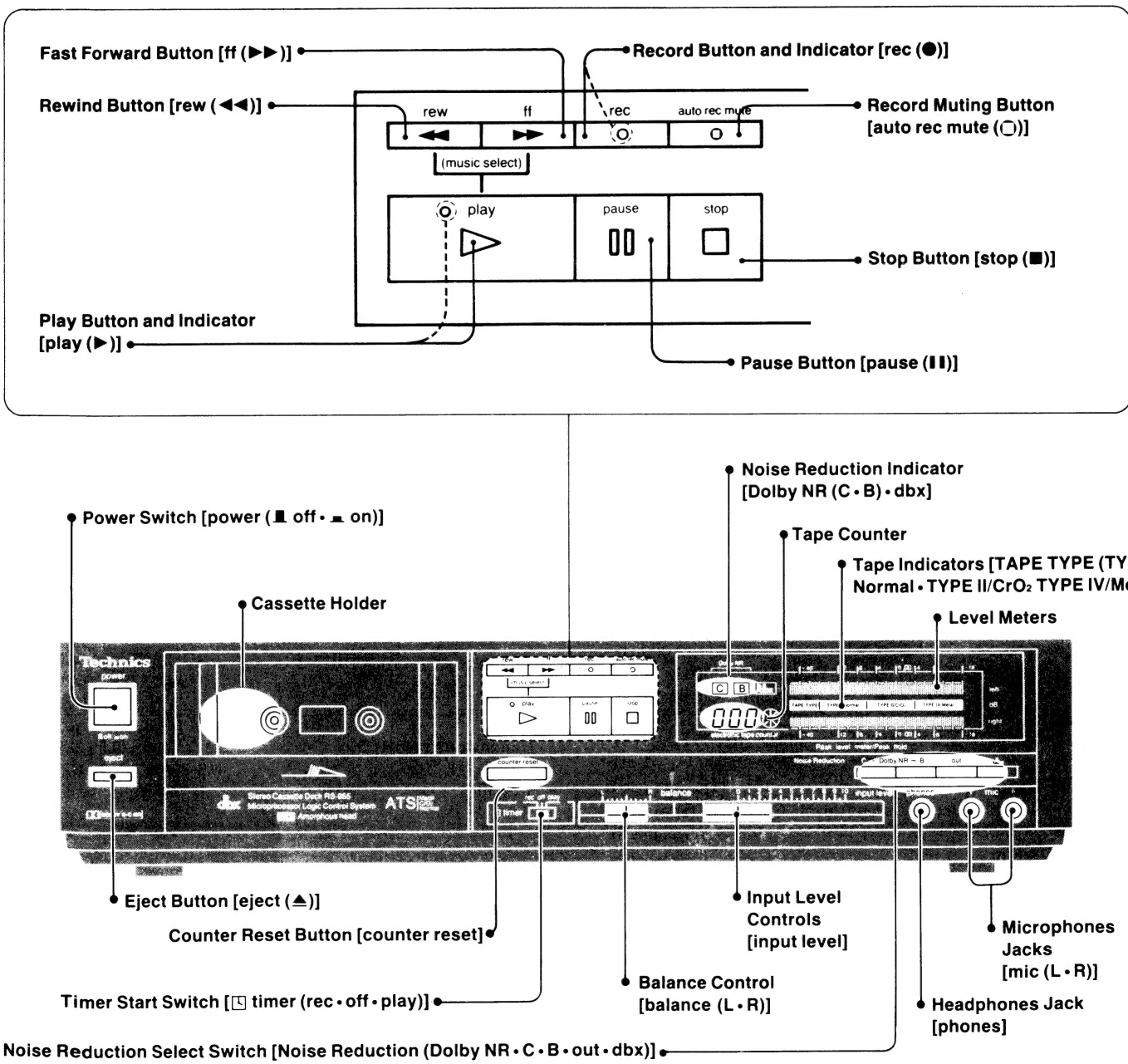
■ LOCATION OF CONTROLS



ORDER NO. HAD85052534C0-A

Cassette Deck

DEUTSCH

Verwenden Sie bitte diese Broschüre Zusammen mit der Service-Anieitung für das Modell Nr. RS-B55.

■ TECHNISCHE DATEN

System	Stereo-Cassettendeck
Spuren	4 Spuren, 2 Kanäle
Tonköpfe	
Aufnahme/Wiedergabe	AX-Kopf
Löschen	Ferrit-Kopf mit Doppelspalt
Motor	1-Motor
Aufnahmesystem	Wechselstrom-Vormagnetisierung
Vormagnetisier ungsfrequenz	80 kHz
Löschsystem	Wechselstrom-Vormagnetisierung
Bandgesch windigkeit	4,8 cm/s
Frequenzgang	
Reineisenbänder	20 Hz~19.000 Hz
	30 Hz~18.000 Hz (DIN)
	40 Hz~17.000 Hz±3 dB
CrO_2-Bänder	20 Hz~18.000 Hz
	30 Hz~17.000 Hz (DIN)
	40 Hz~16.000 Hz±3 dB
Normalbänder	20 Hz~17.000 Hz
	30 Hz~16.000 Hz(DIN)
	40 Hz~15.000 Hz±3 dB
Dynamisher Bereich (mit dbx-Rauschunterdrückung)	110 dB (1 kHz)

Geräuschspannungsabstand:	
(Signalpegel = max. Aussteuerungspegel, CrO_2-Band)	
mit dbx-Rauschunterdrückung	92 dB (nach Abwertef)
mit Dolby C-Rauschunterdrückung	75 dB (CCIR)
mit Dolby B-Rauschunterdrückung	67 dB (CCIR)
ohne Rauschunterdrückung	57 dB (nachA bewertet)
Gleichlauschwankungen	0,07% (WRMS)
	±0,13%(DIN)
Max. Eingangspegelverbesserung (mit dbx)	10 dB (1kHz)
Umspulzeit	ca. 90 s für C-60-Cassette
Eingangsempfindlichkeit und Impedanz	
MIC	0,25 mV/400 Ω~10 kΩ
LINE	60 mV/47 kΩ
Ausgangsspannung und Impedanz	
LINE	400 mV/1,5 kΩ
HEADPHONES	80 mV/8 Ω
Stromaufnahme	18 W
Stromversorgung	
Netz 50 Hz/60 Hz, 220 V für Europa ohne England.	
Abmessungen (B×H×T)	430×99,5×229 mm
Gewicht	3,5 kg

■ MESSUNGEN UND EINSTELL METHODEN

Anm.: Wenn nicht anders vorgeschrieben, Drehschalter und Steuereinrichtungen auf die folgenden Positionen stellen.

- Für saubere Köpfe sorgen.
- Für saubere Tonwelle und Andruckrolle sorgen.
- Auf normale Raumtemperatur achten: 20±5°C (68±9°F)
- Dolby-Schalter: AUS
- Abgleichkontrolle: Mitte (Zentrum)
- Bandsortenschalter: NORMAL
- Eingangswahlschalter: LINE
- Eingangsregler: MAX

Ⓐ Senkrechtstellen des Kopfes

Bedingung:
- Wiedergabe

Meßgerät:
- Elektronische Voltmeter
- Oszillograph
- Testband (azimuth)...QZZCFM

Ausgangsbalance-Justierung für linken und rechten Kanal

1. Den Meßaufbau zeigt Fig. 2.

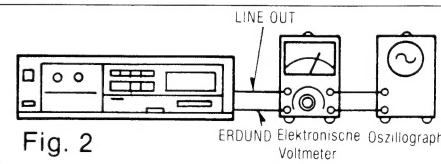


Fig. 2

2. 8kHz-Signal des Testbandes (QZZCFM) wiedergeben. Schraube (B) in Fig. 3 auf maximalen Ausgangspegel des linken und rechten Kanals abgleichen. Sind die Ausgangspegel des linken und rechten Kanals nicht gleichzeitig maximal, wie folgt justieren:
3. Durch Drehen der in Fig. 3 gezeigten Schraube (B) die Winkel A und C (Punkte, wo Spitzenausgangspegel für den linken und rechten Kanal erreicht werden) ermitteln. Anschließend den Winkel B zwischen dem Winkel A und C ermitteln, d.h. den Punkt, wo die Ausgangspegel des linken und rechten Kanals ausbalanciert (ausgeglichen) sind. (Siehe Fig. 3 und 4.)

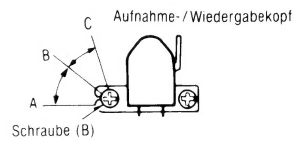


Fig. 3

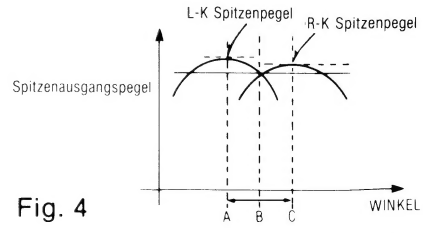


Fig. 4

Phasenjustierung für linken und rechten Kanal

4. Den Meßaufbau zeigt Fig. 5.
5. 8kHz-Signal des Testbandes (QZZCFM) wiedergeben. Schraube (B), wie in Fig. 3 gezeigt, so einstellen, daß Zeiger von zwei Röhrenvoltmeter auf Maximum ausschlagen und am Oszillographen eine Wellenform wie in Fig. 6 erreicht wird.

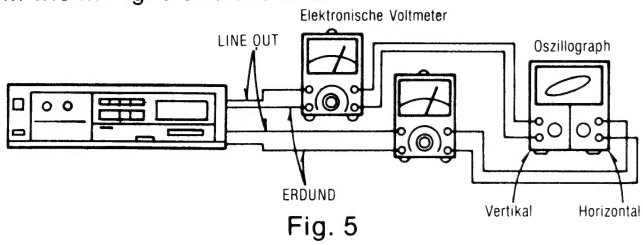


Fig. 5

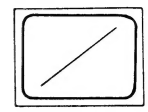


Fig. 6

Ⓑ Bandgeschwindigkeit

Bedingung:
- Wiedergabe

Meßgerät:
- Elektronischer Digitalzähler
- Testband...QZZCWAT

Genauigkeit der Bandgeschwindigkeit

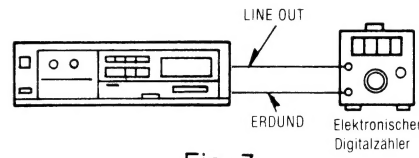


Fig. 7

1. Den Meßaufbau zeigt Fig. 7.
2. Testband (QZZCWAT 3000Hz) wiedergeben und Ausgangssignal dem Zähler zuführen.
3. Frequenz messen.
4. Beträgt die auf dem Testband aufgezeichnete Frequenz 3000Hz, so ergibt sich die Genauigkeit nach folgender Formel:

$$\text{Genauigkeit der Bandgeschwindigkeit} = \frac{f-3000}{3000} \times 100(\%)$$

worin f die gemessene Frequenz ist.

5. Die Messung soll im mittleren Teil des Bandes erfolgen.

NORMALWERT: 0,33% (3000±10Hz)

6. Falls der Meßwert nicht im vorgeschriebenen Bereich liegt, bitte mit Bandgeschwindigkeitsregler VR wie in Fig. 1 gezeigt einstellen.

Anmerkung: Bitte bei dieser Einheit zum Justieren der Bandgeschwindigkeit keinen Metallschraubenzieher benutzen.

Schwankung der Bandgeschwindigkeit:

Messung, wie oben beschrieben für Anfang, mittleren Teil und Ende des Testbandes wiederholen und Schwankung wie folgt bestimmen:

$$\text{Schwankung} = \frac{f_1-f_2}{3000} \times 100(\%)$$

f_1 = Maximalwert
f_2 = Minimalwert

NORMALWERT: 1%

Ⓒ Frequenzgang bei Wiedergabe

Bedingung:
- Wiedergabe

Meßgerät:
- Elektronische Voltmeter
- Oszillograph
- Testband...QZZCFM

1. Den Meßaufbau zeigt Fig. 2.
2. Gerät auf Wiedergabe schalten. Frequenzgang-Testband QZZCFM wiedergeben.
3. Ausgangsspannung bei 315Hz, 12,5kHz, 8kHz, 1kHz, 250Hz, 125Hz und 63Hz messen und jede Ausgangsspannung mit der Standardfrequenz 315Hz an der LINE OUT vergleichen.
4. Messungen an beiden Kanälen durchführen.
5. Prüfen, ob die gemessenen Werte innerhalb des in der Frequenzgang-Übersicht aufgeführten Bereichs liegen. (Siehe Fig. 8.)

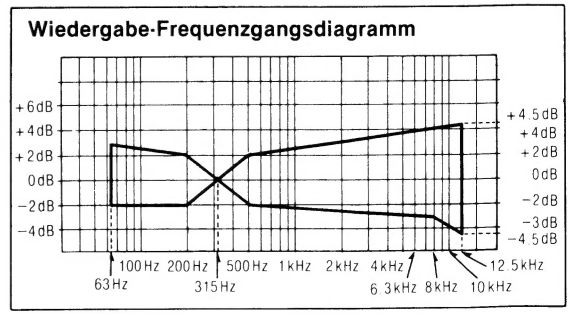


Fig. 8

Ⓓ Wiedergabe-Verstärkung

Bedingung:
- Wiedergabe

Meßgerät:
- Elektronische Voltmeter
- Oszillograph
- Testband...QZZCFM

1. Den meßaufbau zeigt Fig. 2.
2. Den Standard-Aufnahmepegelteil der Testbandcassette (QZZCFM, 315Hz) wiedergeben und mit dem Elektronische Voltmeter den Ausgangspegel an den LINE OUT-Anschlüssen messen.
3. Messung an beiden Kanälen durchführen.

NORMALWERT: 0,4V±0,5dB (0,02V)

Einstellung:

1. Abweichungen können durch Abgleich von VR5 (linker Kanal) und VR6 (rechter Kanal), korrigiert werden.
2. Nach erfolgtem Abgleich ist der Frequenzgang bei Wiedergabe erneut zu kontrollieren.

Ⓔ Löschstrom

Bedingung:
- Aufnahme

Meßgerät:
- Elektronische Voltmeter
- Oszillograph
- Testband (Leerband)...QZZCRZ für Metall

1. Den Meßaufbau zeigt Fig. 9.
2. Die Aufnahme-und Pausentaste drücken.
3. Das Metallband-Referenzleerband (QZZCRZ) einsetzen.
4. Löschstrom nach folgender Formel emitteln:

$$\text{Löschstrom (A)} = \frac{\text{Die Spannung über beide Enden von R301}}{\text{1 (Ohm)}}$$

NORMALWERT: 155±15mA (Metal position) (155±15mV)

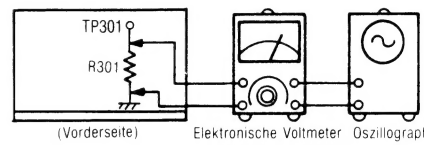


Fig. 9

5. Falls der Meßwert nicht im vorgeschriebenen Bereich liegt, auf folgenden Weise einstellen.

Einstellung:

1. Die Punkte (A) und (B) der Hauptschaltplatte kurzschleißen.
2. Den Löschstrom messen.
3. Beträgt der Löschstrom weniger als 140 mA, den Punkt (B) kurzschließen.
4. Beträgt der Löschstrom mehr als 170 mA: Punkt (A) unterbrechen.

Ⓕ Gesamtfrequenzgang

Bedingung:
- Aufnahme und Wiedergabe
- Eingangsregler...MAX

Meßgerät:
- Elektronische Voltmeter
- NF-Generator
- Abschwächer
- Oszillograph
- Testband (Leerband)
  - ...QZZCRA für Normal
  - ...QZZCRX für CrO_2
  - ...QZZCRZ für Metall
- Widerstand (600Ω)

Anm.:

Vor Messung und Abgleich des Gesamtfrequenzganges ist sicherzustellen, daß der Frequenzgang bei Wiedergabe korrekt ist (Vgl. entspr. Abschnitt).

Gesamtfrequenzgang-Justierung durch Aufnahme-Vomagnetisierungsstrom

(Der Aufnahme-Entzerrer ist fest eingestellt.)

1. Den Meßaufbau zeigt Fig. 11.
2. Das Normalband-Referenzleerband (QZZCRA) einsetzen.
3. An LINE IN ein Signal von 1kHz, −24dB zuführen. Das Gerät auf Aufnahme schalten.
4. Den Dämpfungswiderstand feineinstellen, bis die Ausgangsleistung an LINE OUT 0,4V beträgt.
   - Überprüfen, daß der Signalausgangspegel bei einer Ausgangs-Spannung von 0,4V −24±4dB beträgt.
5. Mit dem NF-Oszillator Signale von 50Hz, 100Hz, 200Hz, 500Hz, 1kHz, 4kHz, 8kHz, 10kHz und 12,5kHz zuführen, und diese Signale auf das Testband aufzeichnen.

Gesamtfrequenzgangs-diagramm (Normal)

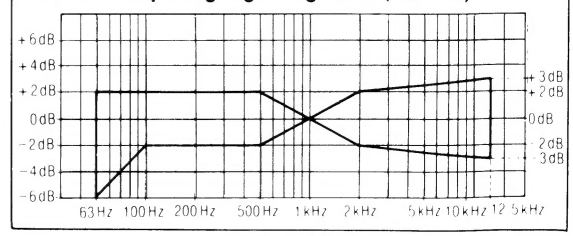


Fig. 10

6. Die in Schritt 5 aufgezeichneten Signale wiedergeben und überprüfen, ob die Frequenzgangkurve innerhalb des Bereichs liegt, der im Frequenzgangdiagramm für normales Band in Fig. 10 gezeigt ist. (Falls die Kurve innerhalb des vorgeschriebenen Bereichs liegt, mit den Schritten 7, 8 und 9 weiterfahren.)
Falls die Kurve außerthalb des vorgeschriebenen Bereichs liegt, wie folgt justieren.

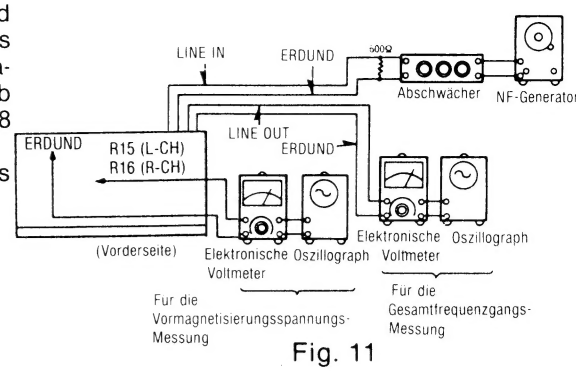


Fig. 11

Justierung (A):

Wenn die Kurve den vorgeschriebenen Gesamtfrequenzgangbereich (Fig. 10) überschreitet, wie in Fig. 12 gezeigt.

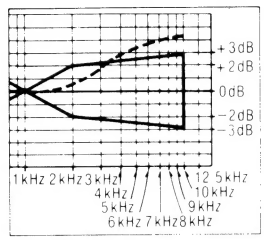


Fig. 12

1) Den Votmagnetisierungsstrom durch Abgleichen von VR301 (linker Kanal) und VR302 (rechter Kanal) erhöhen.
2) Die Schritte 5 und 6 zur Überprüfung wiederholen. (Wenn die Kurve dabei innerhalb des vorgeschriebenen Bereichs liegt (Fig. 10) mit den Schritten 7, 8, und 9 weiterfahren.)
3) Wenn die Kurve den vorgeschriebenen Bereich (Fig. 10) noch immer überschreitet, den Vormagnetisierungsstrom weiter erhöhen, und die Schritte und wiederholen.

Justierung (B):

Wenn die Kurve unter den vorgeschriebenen Bereich für den Gesamtfrequenzgang (Fig. 10) absinkt, wie in Fig. 13 gezeigt:

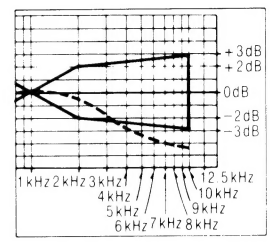


Fig. 13

1) Den Vormagnetisierungsstrom durch abgleichen von VR301 (linker Kanal) und VR302 (rechter Kanal) reduzieren.
2) Die Schritte 5 und 6 zur Überprüfung wiederholen. (Falls die Kurve dabei innerhalb des vorgeschriebenen Bereichs in Fig. 10 liegt, mit den Schritten 7, 8, und 9 weiterfahren.)
3) Falls die Kurve noch immer unter den vorgeschriebenen Bereich (Fig. 10) absinkt, den Vormagnetisierungsstrom weiter reduzieren, und Schritte 5 und 6 wiederholen.

7. Das CrO_2 Band-Referenzleerband (QZZCRX) einsetzen.
8. Testband QZZCRX einlegen, und Signale von 50Hz, 100Hz, 200Hz, 500Hz, 1kHz, 4kHz, 8kHz, 10kHz und 15kHz aufzeichnen; Anschliessend die Signale wiedergeben und prüfen, ob die Kurve innerhalb des Bereichs liegt, der im Gesammtfrequenzgang-Diagramm für das CrO_2 Band dargestellt ist. (Fig. 14.)
9. Das Metallband-Referenzleerband (QZZCRZ) einsetzen. Testband QZZCRZ einlegen und Signale von 50Hz, 100Hz, 200Hz, 500Hz, 1kHz, 4kHz, 8kHz, 10kHz und 15kHz aufnehmen. Anschließend die Signale wiedergeben und prüfen, ob die Kurve innerhalb des Bereichs im Gesamtfrequenzgangdiagramm für Metallband liegt. (Fig. 14.)
10. Überprüfen, daß die Vorspannung ungefähr den folgenden Werten entsprechen, wenn der Bandsortenschalter in die entsprechende Position gestellt ist.

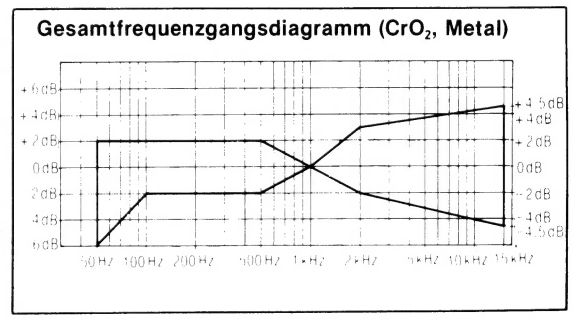


Fig. 14

- Die spannung an den Anschlüssen des Widerstandes R15 (linker Kanal) [R16 (rechter Kanal)] ablesen und den Vormagnetisierungsstrom entsprechend folgender Formel berechnen.

$$\text{Vormagnetisierungsstrom (A)} = \frac{\text{Spannung am Elektronische Voltmeter (V)}}{10\ (\Omega)}$$

Bezugswert:	**Ungefähr 170 μA (Normal position)** **Ungefähr 200 μA (CrO_2 position)** **Ungefähr 370 μA (Metall position)**

⑥ Gesamtverstärkung

Bedingung:
- Aufnahme und Wiedergabe
- Eingangsregler: MAX
- Standard-Eingangspegel:

Mikrofon .... -72^{+5}_{-3}dB (0,25 mV)
NF-Eingang.... −24±4 dB (63 mV)

Meßgerät:
- Elektronische Voltmeter
- NF-Generator
- Abschwächer
- Oszillograph
- Widerstand (600Ω)
- Testband (Leerband)
  ...QZZCRA für Normal

1. Den Meßaufbau zeigt Fig. 15.
2. Das Normalband-Referenzleerband (QZZCRA) einsetzen.
3. Gerät auf "Aufnahme" schalten.
4. Über den Abschwächer ein 1kHz-Signal (−24dB) vom NF-Generator dem NF-Eingang zuführen.
5. ATT justieren, bis der Monitorpegel an den LINE OUT-Anschlüssen 0,4V beträgt.
6. Eine bespielte Cassette wiedergeben und überprüfen, ob der Ausgangspegel an den LINE OUT-Anschlüssen 0,4V beträgt.
7. Wenn der gemessene Wert nicht 0,4V erreicht, die folgenden VR abgleichen: VR103 (L-K) oder VR104 (R-K).
8. Ab Punkt 2 wiederholen.

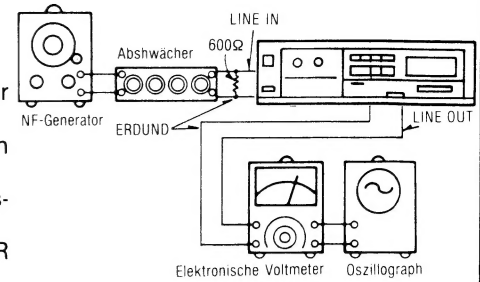


Fig. 15

ⓗ Fluoreszenzmeter

Bedingung:
- Aufnahme
- Eingangsregler...MAX.

Meßgerät:
- Elektronische Voltmeter
- NF-Generator
- Abschwächer
- Oszillograph
- Widerstand (600Ω)

1. Der Anschluß des Prüfgerätes wird in Fig. 15 gezeigt.
2. Die Einheit auf Aufnahmestellung schalten.
3. Ein 1kHz Signal (−24dB) vom AF Oszillator durch "ATT" auf "LINE IN" goben.

Justierung auf −40 dB

4. Abschwächer so abstimmen, daß der in Stufe 3 abgestimmte Pegel um 40 dB vermindert wird.
5. Zu diesem Zeitpunkt prüfen, ob der −40 dB Anzeiger abgeschwächt leuchtet (mittelhell, zwischen ganz hell und erlöscht: Siehe Fig. 16).
6. Wenn der Anzeiger nicht, wie in Stufe 6 beschrieben, abgeschwächt, leuchtet VR102 abstimmen.

Justierung auf 0 dB

7. Den Zustand von Stufe 3 herstellen. Ausganspegel auf 0,4 V±0,02 V an der LINE OUT festsetzen.
8. Zu diesem Zeitpunkt prüfen, ob der 0 dB Anzeiger abgeschwächt aufleuchtet (mittelhell, zwischen ganz hell und erlöscht siehe Fig. 17).
9. Wenn nicht korrekt, VR201 abstimmen.
10. Einstellungen und Prüfungen der Stufen 3, 4, 5, 6, 7, 8 und 9 zweibis dreimal wiederholen.

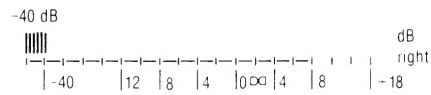


Fig. 16

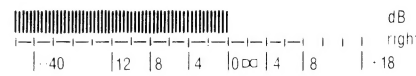


Fig. 17

ⓘ Dolby-Schaltung

Bedingung:
- Aufnahme
- Dolby-Schalter ...IN/OUT (AN/AUS)
- Dolby-Wahlschalter ...B/C
- Eingangsregler...MAX.

Meßgerät:
- Elektronische Voltmeter
- NF-Generator
- Abschwächer
- Oszillograph
- Widerstand (600Ω)

Aufnahmeseite

- Überprüfung der Dolby-B-Typ Verschlüsselungsmerkmale.

1. Den Meßaufbau zeigt Fig. 18.
2. Gerät auf "Aufnahme" stellen. (Dolby-Wahlschalter ist OUT (AUS).)
3. Dem NF-Eingang ein 1kHz-Signal zuführen.
4. Abschwächer so abstimmen, daß die Ausgangsspannung an Nadel 7 von IC401 (L-K) und IC402 (R-K) 12,3mV beträgt.
5. Die Ausgangsspannung an Nadel 21 sollte 0dB betragen (375mV).
6. Den Dolby-Wahlschalter auf B stellen. Sicherstellen, daß das Ausgangssignalpegel an Nadel 21 von IC401 (L-K) und IC402 (R-K) +6 dB±1,5 dB beträgt (753 mV).
7. Dolby-Wahlschalter ausschalten und die Frequenz auf 5kHz abstimmen. Das Ausgangssignal an Nadel 21 sollte 0dB betragen (375mV).
8. Dolby-Wahlschalter auf B stellen und sicherstellen, daß das Ausgangssignalpegel an Nadel 21 von IC401 (L-K) und IC402 (R-K) +8 dB±1,5 dB beträgt (948 mV).

• Überprüfung der Dolby-C-Typ Verschlüsselungsmerkmale

1. Obige Stufen 1 bis 5 wiederholen.
2. Dolby-Wahlschalter auf C stellen und sicherstellen, daß das Ausgangssignalpegel an Nadel 21 von IC401 (L-K) und IC402 (R-K) +11,5 dB±2 dB beträgt (1,4 V).
3. Dolby-Wahlschalter ausschalten und die Frequenz auf 5kHz abstimmen.
   Die Ausgangsspannung an Nadel 21 sollte 0dB sen (375mV).
4. Dolby-Wahlschalter auf C stellen und sicherstellen, daß das Ausgangssignalpegel an Nadel 21 von IC401 (L-K) und IC402 (R-K) +8,5 dB±2 dB beträgt (1 V).

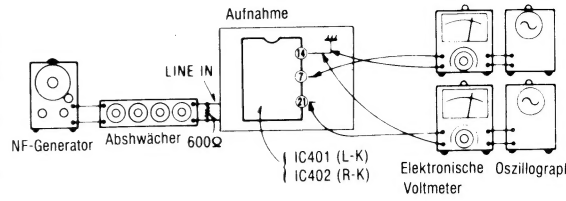


Fig. 18

Einsatz Ausgleichszeit-Justierung (dbx Schaltung)

Bedingung:
- Betriebsart Aufnahme Eingangspegelregler...MAX
- Abgleichkontrolle ...Mitte (Zentrum)

Meßgeräte:
- Elektronische Voltmeter
- Dämpfungeglied
- AF-Oszillator
- Gleichstromvoltameter
- Gerauschverminderungs-Schalter...dbx Band

1. Führen Sie die in Fig. 19 gezeigten Anschlüsse durch und geben Sie ein 1kHz −27dB Signal vom LINE IN ein und stellen Sie den Lärmreduktionswähler in die Position dbx.
2. Versetzen Sie das Gerät in die Betriebsart Aufnahme und stellen Sie das Dämpfungsglied so ein, daß der Signalpegel beim C541 (linker kanal) und beim C542 (rechter kanal) 300mV ist.
3. Voltzahl auf DC Voltmeter ablesen.

   Bezugswert: 15±0,5 mV

4. Weicht der Meßwert vom Bezugswert ab, VR101 abgleichen.

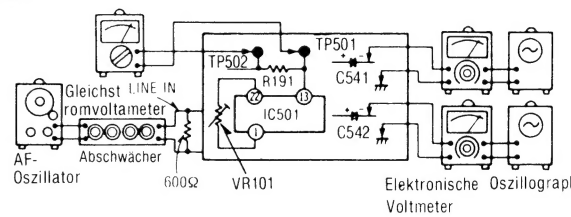


Fig. 19

FRANÇAIS

Ceci est à utiliser conjointement avec le manuel d'entretien du modèle No. RS-B55.

■ CARACTERISTIQUES

Platine	Platine magnéto-cassette stéréo
Pistes	4 pistes, 2 canaux
Têtes	
ENREGISTREMENT/LECTURE	Tête en AX
Effacement	Tête en ferrite à double entrefer
Moteur	1-moteur
Système d'enregistrement	Polarisation CA
Fréquence de polarisation	80 kHz
Système d'effacement	Polarisation CA
Vittesse de défilement de la bande	4,8 cm/sec.
Réponse en fréquence	
Métal	20 Hz~19.000 Hz
	30 Hz~18.000 Hz (DIN)
	40 Hz~17.000 Hz±3 dB
CrO_2	20 Hz~18.000 Hz
	30 Hz~17.000 Hz (DIN)
	40 Hz~16.000 Hz±3 dB
Normal	20 Hz~17.000 Hz
	30 Hz~16.000 Hz(DIN)
	40 Hz~15.000 Hz±3 dB
Portée dynámique (ávec système dbx)	110 dB
Rapport signal/bruit:	
(niveau de signal = niveau d'enregistrement maximum, bande magnétique de type CrO_2)	
Système dbx	92 dB (A pondéré)
Système de Dolby C	75 dB (CCIR)
Système de Dolby B	67 dB (CCIR)
Pas de système de NR	57 dB (A pondéré)
Pleurage et scintillement	0,07% (WRMS)
	±0,13%(DIN)
Améoration du niveáu d'entrée maximum (ávec systéme dbx)	10 dB (1kHz)
Temps d'avance rapide et de rebobinage	Environ 90 secondes pour une cassette C-60
Sensibilité et impédance d'entrée	
MIC	0,25mV/400Ω~10 kΩ
LIGNE	60 mV/47 kΩ
Tension et impédance de sortie	
LIGNE	400 mV/1,5 kΩ
HEADPHONES	80 mV/8 Ω
Consommation	18 W
Alimentation	AC 50 Hz/60 Hz 220 V pour l'Europe sauf la Grande Bretagne.
Dimensions (L×H×P)	430×99,5×229 mm
Poids	3,5 kg

■ METHODES DES MEASURES ET REGLAGES

REMARQUES: Placer les interrupteurs et les contrôles dans les positions suivantes, sauf indication contraire.
- Vérifier que les têtes soient propres.
- Vérifier que le cabestan et le galet presseur soient propres.
- Température ambiante admissible: 20±5°C
- Interrupteur de réduction de bruit: OUT
- Sélecteur de bande: Normal
- Sélecteur d'entrée: Line in
- Contrôles de niveau d'entrée: Maximum
- Contrôle de l'equilibre:Centre

Ⓐ Réglage de l'azimut de tête

Condition:
- Mode de lecture

Equipement:
- Voltmètre électronique
- Oscilloscope
- Bande étalon (azimut) ...QZZCFM

Réglage de l'équilibre de la sortie au canal gauche/canal droit

1. Brancher les appareils comme indiqué dans la Fig. 2.
2. Reproduire le signal de 8kHz de la bande étalon (QZZCFM). Régler la vis (B) dans la Fig. 3 pour obtenir les niveaux de sortie maximum pour les canaux gauche et droit. Lorsque les niveaux de sortie des canaux gauche et droit ne sont pas simultanément à leur maximum, les régler à nouveau de la façon suivante.
3. Faire tourner la vis indiquée dans la Fig. 3 pour trouver les angles A et C (point où les niveaux de sortie de crête pour les canaux gauche et droit sont obtenus respectivement). Situer alors l'angle B entre les angles A et C, autrement dit, en un point où les niveaux de sortie des canaux gauche et droit atteignent tous deux leur maximum. (Voir les Fig. 3 et 4).

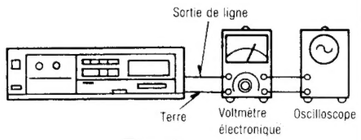


Fig. 2

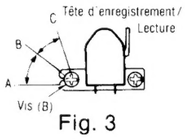


Fig. 3

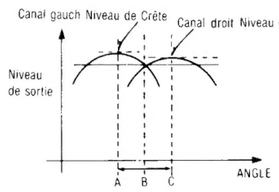


Fig. 4

Réglage de phase canal gauche/canal droit

4. Brancher les appareils comme indiqué dans la Fig. 5.
5. Reproduire le signal de 8kHz de la bande étalon (QZZCFM). Régler la vis (B) indiquée dans la Fig. 3 de sorte que les aiguilles des deux voltmètres électroniques oscillent au maximum, et qu'on obtienne sur l'oscilloscope une forme d'onde semblable à celle indiquée dans la Fig. 6.

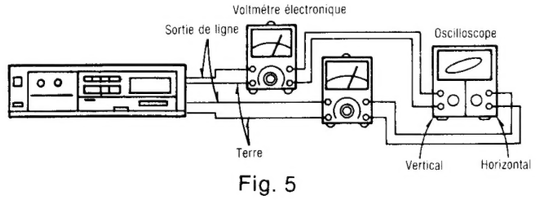


Fig. 5

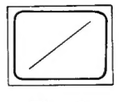


Fig. 6

Ⓑ Vitesse de défilement

Condition:
- Mode de lecture

Equipement:
- Fréquencemètre numérique
- Bande étalon...QZZCWAT

Précision de la vitesse de défilement

1. Brancher les appareils comme indiqué dans la Fig. 7.
2. Lire la bande étalon (QZZCWAT, 3000Hz) et appliquer le signal de lecture au fréquencemètre numérique.

3. Mesurer sa fréquence.
4. Sur la base de 3000Hz, déterminer la valeur à l'aide de la formule.

$$\text{Précision de vitesse} = \frac{f-3000}{3000} \times 100(\%)$$

avec f = valeur mesurée.

5. Effectuer la mesure sur la partie médiane de la bande.

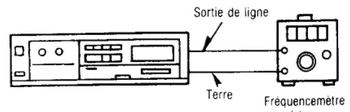


Fig. 7

Valeur standard: 0,33% (3000±10Hz)

6. Si la valeur mesurée ne correspond pas à la valeur standard, régler au moyen de la vis VR de réglage de la vitesse de défilement indiquée dans la Fig. 1.
   Remarque: Utiliser un tournevis qui ne soit pas métallique pour le réglage de la précision de la vitesse de défilement sur cette unité.

Fluctuations de vitesse de défilement

Faire les mesures de la même façon que ci-dessus (au début, au milieu et en fin de bande) et déterminer la différence entre les valeurs maximale et minimale, puis calculer comme suit.

$$\text{Fluctuations de vitesse} = \frac{f_1-f_2}{3000} \times 100(\%)$$

f_1 = valeur maximale
f_2 = valeur minimale

Valeur standard: 1%

Ⓒ Réponse en fréquence à la lecture

Condition:
- Mode de lecture

Equipement:
- Voltmètre électronique
- Oscilloscope
- Bande étalon ...QZZCFM

1. Brancher les appareils comme indiqué dans la Fig. 2.
2. Lire la portion de réponse en fréquence de la bande étalon (QZZCFM).
3. Mesurer les niveaux de sortie à 315Hz, 12,5kHz, 8kHz, 4kHz, 1kHz, 250Hz, 125Hz, et 63Hz et comparer chaque niveau de sortie avec celui de la fréquence standard de 315Hz sur la borne LINE OUT.
4. Effectuer les mesures sur les deux canaux.
5. Vérifier que les valeurs mesurées se situent dans la bande spécifiée de la courbe de réponse en fréquence. (Voir Fig. 8).

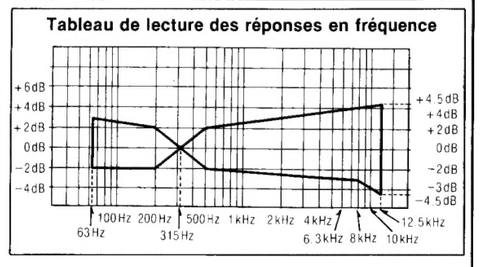


Fig. 8

Ⓓ Gain à la lecture

Condition:
- Mode de lecture

Equipement:
- Voltmètre électronique
- Oscilloscope
- Bande étalon...QZZCFM

1. Brancher les appareils comme indiqué dans la Fig. 2.
2. Faire jouer la portion du niveau d'enregistrement normal sur la bande d'essai (QZZCFM, 315Hz) et, en utilisant un voltmètre électronique, mesurer le niveau de sortie aux sorties en ligne.
3. Effectuer les mesures sur les deux canaux.

Valeur standard: 0,4V±0,5dB (0,02V)

Réglage

1. Si la valeur mesurée ne correspond pas à la valeur standard régler VR5 (canal gauche) ou VR6 (canal droit).
2. Après réglage, vérifier à nouveau la "réponse en fréquence à la lecture".

Ⓔ Courant d'effacement

Condition:
- Mode d'enregistrement

Equipement:
- Voltmètre électronique
- Oscilloscope
- Bande étalon vierge ...QZZCRZ pour bande métallique

1. Brancher les appareils comme indiqué dans la Fig. 9.
2. Insérer la bande d'essai vierge de référence métallisée (QZZCRZ).
3. Appuyer sur les boutons d'enregistrement et de pause.
4. Lire le voltage sur le voltmètre électronique et calculer le courant d'effacement au moyen de la formule suivante:

$$\text{Courant d'effacement (A)} = \frac{\text{Voltage à la résistance R301}}{1\ (\Omega)}$$

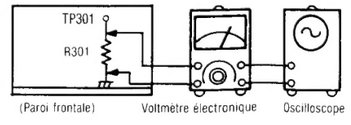


Fig. 9

Valeur standard: 155±15mA (bande métallique) (155±15mV)

5. Si la valeur mesurée ne correspond pas à la valeur standard, régler selon les instructions ci-après.

Réglage:

1. Court-circuiter les points (A) et (B) sur le tableau du circuit principal.
2. Mesurer le courant d'effacement.
3. Si le courant d'effacement est inférieur à 140 mA, court-circuiter le point (B).
4. Si le courant d'effacement est supérieur à 170 mA, court-circuiter le point (A).

Ⓕ Réponse de fréquence globale

Condition:
- Mode enregistrement/lecture
- Contrôles de niveau d'entrée...MAX

Equipement:
- Voltmètre électronique
- Atténuateur
- Oscillateur
- Oscilloscope
- Résistance (600Ω)
- Bande étalon vierge
  ...QZZCRA pour bande normale
  ...QZZCRX pour bande CrO_2
  ...QZZCRZ pour bande métallique

Remarque:

Avant de mesurer et régler la réponse de fréquence globale vérifier que la réponse en fréquence à la lecture soit correcte (pout la méthode de mesure, se reporter au paragraphe intitulé "Réponse en fréquence à la lecture").
(Le compensateur d'enregistrement est fixe.)

1. Brancher les appareils comme indiqué dans la Fig. 11.
2. Insérer la bande d'essai vierge de référence normale (QZZCRA).
3. Appliquer le signal de 1kHz de l'oscillateur AF à la borne LINE IN, par l'intermédiaire de l'atténuateur.
4. Régler l'atténuateur de sorte que le niveau d'entrée soit de 20dB en-dessous du niveau d'enregistrement standard (niveau d'enregistrement standard = 0VU).
5. Régler l'oscillateur AF pour produire des signaux de 50Hz 100Hz, 200Hz, 500Hz, 1kHz, 4kHz, 8kHz et 12,5kHz et enregistrer ces signaux sur la bande étalon.
6. Reproduire les signaux enregistrés dans la phase 6, et vérifier si la courbe de réponse de fréquence se trouve dans les limites indiquées par la courbe de réponse de fréquence globale pour bandes normales (Fig. 10).
   (Si la courbe est comprise dans les spécifications, passer aux phases 7, 8 et 9).
   Si la courbe ne correspond pas aux spécifications du tableau, régler comme suit.

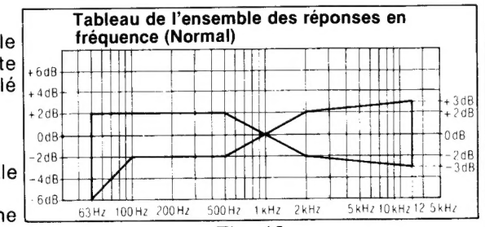


Fig. 10

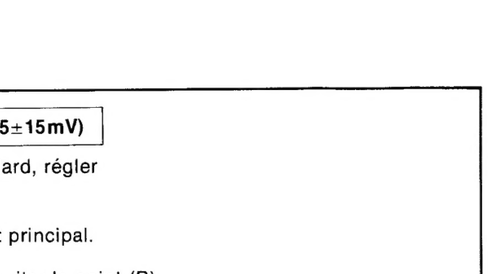


Fig. 11

Réglage (A):

Lorsque la courbe dépasse les spécifications du tableau de réponse de fréquence globale (Fig. 10), comme indiqué dans la Fig. 12.

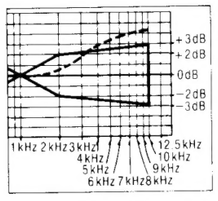


Fig. 12

1) Augmenter le courant de polarisation en tournant VR301 (canal gauche) et VR302 (canal droit).
2) Répéter les phases 5 et 6 pour confirmation. (Passer aux phases 7, 8 et 9 si la courbe est maintenant comprise dans les spécifications du tableau de la Fig. 10).
3) Si la courbe dépasse encore les spécifications (Fig. 10), augmenter encore le courant de polarisation et répéter les phases 5 et 6.

Réglage (B):

Lorsque la courbe tombe au-dessous des spécifications du tableau de fréquence globale (Fig. 10) comme indiqué dans la Fig. 13.

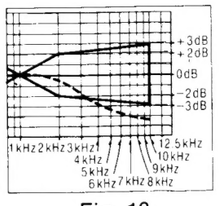


Fig. 13

1) Réduire le courant de polarisation en tournant VR301 (canal gauche) et VR302 (canal droit).
2) Répéter les phases 5 et 6 pour confirmation. (Passer aux phases 7, 8 et 9 si la courbe est maintenant comprise dans les spécifications du tableau de la Fig. 10).
5) Si la courbe tombe encore au-dessous des spécifications du tableau (Fig. 10), réduire encore le courant de polarisation et répéter les phases 5 et 6.

7. Insérer la bande d'essai vierge de référence CrO_2 (QZZCRX).
8. Enlever la bande étalon vierge normale et placer la bande étalon QZZCRX (bande CrO_2). Enregistrer les signaux de 50Hz, 100Hz, 200Hz, 500Hz, 1kHz, 4kHz, 8kHz, 10kHz et 15kHz. Reproduire ensuite ces signaux et vérifier si la courbe est comprise dans les limites indiquées par le tableau de réponse de fréquence globale pour les bandes CrO_2 (Fig. 14).
9. Changer la bande étalon pour la bande étalon vierge QZZCRZ (bande métallique), et enregistrer les signaux de 50Hz, 100Hz, 200Hz, 500Hz, 1kHz, 4kHz, 8kHz, 10kHz et 15kHz. Ensuite, lire les signaux et vérifier si la courbe se trouve entre les limites indiquées dans le tableau de réponse en fréquence globale pour les ruban CrO_2 (Fig. 14.)
10. Confirmer que les voltage de polarisation sont approximativement les suivants lorque le sélecteur de bande est mis sur ses différentes positions.

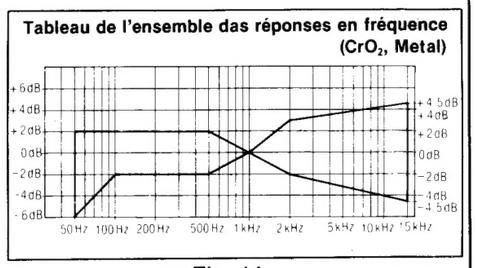


Fig. 14

- Lire la tension aux bornes de la rèsistance R15 (canal gauche) [R16 (canal droit)], et calculer le courant de polarisation á partir de la formule suivante.

$$\text{Courant de polarisation (A)} = \frac{\text{Tension lue sur voltm. elec. (V)}}{10\ (\Omega)}$$

VALEUR STANDARD:
Autour de 170 μA (Position: Normal)
Autour de 200 μA (position: CrO_2)
Autour de 370 μA (position: Metal)

Ⓖ Gain global

Condition:
- Mode d'enregistrement/lecture
- Contrôles de niveau d'entrée ...MAX
- Niveau d'entrée standard:
  MIC ..... -72^{+5}_{-3}dB (0,25 mV)
  LINE IN ..... −24±4 dB (63 mV)

Equipement:
- Voltmètre électronique
- Oscillateur AF
- Atténuateur
- Oscilloscope
- Résistance (600Ω)
- Bande étalon vierge...QZZCRA pour bande normale

1. Brancher les appareils comme indiqué dans la Fig. 15.
2. Introduire la bande étalon vierge (QZZCRA).
3. Placer l'UNITE en mode d'enregistrement.
4. Appliquer le signal de 1kHz de l'oscillateur AF à la borne LINE IN, par l'intermédiaire de l'atténuateur (−24dB).
5. Régler ATT jusqu'à ce que le niveau du moniteur aux sorties de ligne soit de 0,4V.
6. Faire jouer la bande enregistrée et s'assurer que le niveau de sortie aux sorties en ligne soit de 0,4V.
7. Si la valeur mesurée n'est pas de 0,42 V,régler au moyen de VR103 (canal gauche) ou VR104 (canal droit).
8. Recommencer à partir de la phase (2).

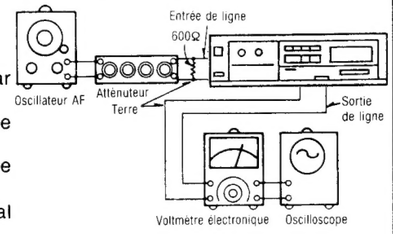


Fig. 15

Ⓗ Vumètre de niveau

Condition:
- Mode d'enregistrement
- Contrôles de niveau d'entrée ...MAX

Equipement:
- Voltmètre électronique
- Atténuateur
- Oscillateur AF
- Oscilloscope
- Résistance (600Ω)

1. La connection de l'équipement d'essai est montré sur la Fig. 15.
2. Placer l'appareil sur le mode d'enregistrement.
3. Transmettre un signal de 1kHz (−24dB) à partir de l'oscillateur d'audiofréquence par l'atténuateur LINE IN.

Réglage à "−40 dB"

4. Régler l'atténuateur de sorte que le niveau réglé à la phase 3 soit réduit de 40 dB.
5. A ce moment, vérifier que le segment −40 dB s'obscurcisse (luminosité intermédiaire entre pleine luminosité et extinction: voir Fig. 17).
6. Si la luminosité du segment n'est pas comme celle mentionée à la phase 6 ci-dessus, régler le VR102.

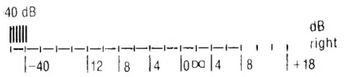


Fig. 16

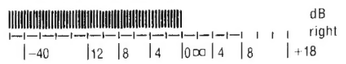


Fig. 17

Réglage à "0 dB"

7. Rétablir les conditions de la phase 3 (niveau de sortie sur la borne LINE OUT de valeur 0,43 V±0,02V).
8. A ce moment, vérifier que le segment 0 dB s'obscurcisse (luminosité intermédiaire entre pleine luminosité et extenction: voir Fig. 18).
9. Si la luminosité du segment n'est pas come indiqué ci-dessus, régler le VR201.
10. Répéter les réglages et vérifications des phases 3, 4, 5, 6, 7, 8 et 9 deux ou trois fois.

❶ Circuit de réduction de bruit Dolby

Condition:
- Mode d'enregistrement
- Interrupteur de réduction de bruit Dolby...IN/OUT
- Interrupteur de sélection du système de réduction de bruit Dolby...B/C
- Contrôles de niveau d'entrée...MAX
- Contrôle de l'équilibre ...Centre

Equipement:
- Voltmètre électronique
- Oscillateur AF
- Atténuateur
- Oscilloscope
- Résistance (600Ω)

Côté enregistrement

• Vérification des caractéristiques du codeur de type Dolby-B

1. Brancher les appareils comme indiqué dans la Fig. 18.
2. Placer l'unité sur le mode d'enregistrement. (L'interrupteur de sélection du système de réduction de bruit est sur la position OUT).
3. Appliquer un signal de 1kHz à la borne LINE IN.
4. Régler l'atténuateur de sorte que le niveau de sortie á la points 7 des circuits intégrés IC401 (canal gauche) et IC402 (canal droit) soit de 12,3mV (375mV).
5. Le niveau de sortie à la pointe 21 devrait être de 0dB.
6. Placer l'interrupteur de sélection du système de réduction de bruit sur B et s'assurer que le niveau du signal de sortie à la pointe 21 des circuits intégrés IC401 (canal gauche) et IC402 (canal droit) est de +6 dB±1,5 dB (753 mV).
7. Placer l'interrupteur de sélection du système de réduction de bruit sur la position OUT et régler la fréquence sur 5kHz. Le niveau du signal de sortie à la pointe 21 devrait être de 0dB (375mV).
8. Placer l'interrupteur de sélection du système de réduction de bruit sur la position B et s'assurer que le niveau du signal de sortie à la pointe 21 des circuits intégrés IC401 (canal gauche) et IC402 (canal droit) soit de +8 dB±1,5 dB (948 mV).

• Vérification des caractéristiques du codeur de type Dolby-C

1. Répéter les phases 1 à 5 ci-dessus.
2. Placer l'interrupteur de sélection du système de réduction de bruit Dolby sur la position C et s'assurer que le niveau de signal de sortie à la pointe 21 des circuits intégrés IC401 (canal gauche) et IC402 (canal droit) soit de 11,5 dB±2 dB (1,4 V).
3. Placer l'interrupteur de sélection du système de réduction de bruit sur la position OUT et régler la fréquence sur 5kHz. Le niveau du signal de sortie à la pointe 21 devrait être de 0dB (375mV).
4. Placer l'interrupteur de sélection du système de réduction de bruit sur la position C et s'assurer que le niveau du signal de sortie à la pointe 21 des circuits intégrés IC401 (canal gauche) et IC402 (canal droit) soit de +8,5 dB ±2 dB (1 V).

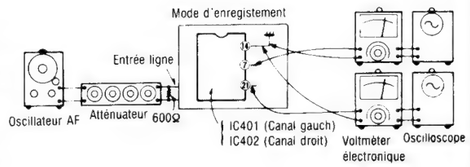


Fig. 18

❷ Réglage du temps de recouvrement à l'attaque (circuit dbx)

Condition:
- Mode d'enregistrement
- Contrôles de niveau d'entrée...MAX
- Contrôle de l'équilibre ...Centre

Equipement:
- Voltmètre électronique
- Atténuateur
- Oscillateur AF
- Voltmètre CC
- Sélecteur de réduction de bruit...position de bande dbx ("dbx tape")

1. Faire les branchements comme indiqué dans la Fig. 19 et appliquer un signal de 1kHz −27dB à la borne LINE IN. Placer le sélecteur de réduction de bruit sur la position de bande dbx ("dbx tape").
2. Placer l'unité sur le mode d'enregistrement. Régler l'atténuateur de sorte que le niveau de signal à C541 (canal gauche) et à C542 (canal droit) soit de 300mV.
3. Lire la tension indiquée sur le voltmètre CC.

Valeur de réference: 15±0,5 mV

4. Si la valeur lue ne correspond pas à la valeur de référence, régler VR101.

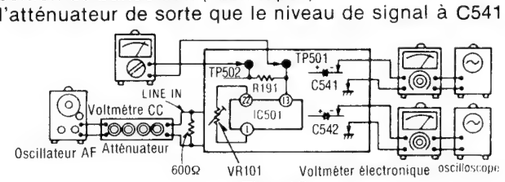


Fig. 19

ESPAÑOL

Sirvase utilizarse junto con manual de servicio para el model No. RS-B55.

■ ESPECIFICACIONES TECNICAS

Sistema de platina	Platina de cassette estéreo
Sistema de pistas	4 pistas, 2 canales
Cabezas de GRAB/REPROD	Cabeza de AX
Cabezas de borrado	Cabeza de ferrita de 2 entrehierros
Motores	1 Motor
Frecuencia de polarización	80 kHz
Sistema de borrado	Polarización de CA
Velocidad de cinta	4,8 cm/seg.
Respuesta de frequencia	
Metal	20 Hz~19.000 Hz 30 Hz~18.000 Hz (DIN) 40 Hz~17.000 Hz±3 dB
CrO_2	20 Hz~18.000 Hz 30 Hz~17.000 Hz (DIN) 40 Hz~16.000 Hz±3 dB
Normal	20 Hz~17.000 Hz 30 Hz~16.000 Hz(DIN) 40 Hz~15.000 Hz±3 dB
Gámá dinámicá (con dbx)	110 dB (1 kHz)
Señal a ruido: (niveau de señal = niveal de grabación máx. tipo de cinta CrO_2)	
con dbx	92 dB (promedio A)
con reducción de ruidos Dolby C	75 dB (CCIR)
con reducción de ruidos Dolby B	67 dB (CCIR)
sin reducción de ruidos	57 dB (promedio A)
Variación de velocidad	0,07% (WRMS) ±0,13% (DIN)
Máximá mejorá de nivel de entrádá (con dbx)	10 dB (1 kHz)
Tiempo de avance rápido y rebobinado	Approx. 90 segundos con cintas C-60
Sensibilidad de entrada e impedancia	
MIC	0,25 mV/400 Ω~10 kΩ
LINE	60 mV/47 kΩ
Voltaje de salida e impedancia	
LINE	400 mV/1,5 kΩ
HEADPHONES	80 mV/8 Ω
Consumo de corriente	18 W
Alimentación de energía	220 V para Europe realizar Royaume-Uni.
Dimensions (An.×Al×Prof.)	430×99,5×229 mm
Peso	3,5 kg

■ METODOS DE AJUSTE Y MEDIDA

NOTAS: Colocar los interruptores y controles en las posiciones siguientes a no ser que se especifique lo contrario:
- Asegurarse de que las cabezas estén limpias.
- Asegurarse de que los cabrestantes y los rodillos presores estén limpios.
- Temperatura ambiente aconsejable: 20±5°C (68±9°F)
- Interruptor NR: OUT
- Selector de cinta: Normal
- Selector de entrada: Line in
- Controles del nivel de entrada: Máximo
- Control del balance: Centro

Ⓐ Ajuste de azimut de las cabezas

Condición:
- Modo de reproducción

Equipo:
- EVM (Voltímetro electrónico)
- Osciloscopio
- Cinta de prueba (azimut) ...QZZCFM

Ajuste del equilibrio de salida L-CH/R-CH (canal izquierdo/canal derecho)

1. Efectuar las conexiones como muestra la Fig. 2.
2. Reproducir la señal de 8kHz desde la cinta de prueba (QZZCFM). Ajustar el tornillo (B) en Fig. 3 para obtener niveles L-CH y R-CH de salida máxima. Cuando los niveles de salida de L-CH ´y R-CH no están al máximo, al mismo tiempo, reajustar de la siguiente forma:
3. Girar el tornillo mostrado en Fig. 3 para buscar los ángulos A y C (puntos donde los niveles de salida de cresta se obtienen para los canales derecho y izquierdo). Luego, localizar el ángulo B entre los ángulos A y C, por ej., el punto donde los niveles de salida de R-CH y L-CH estén equilibrados. (Consultar Fig. 3 y 4.)

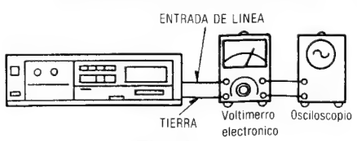


Fig. 2

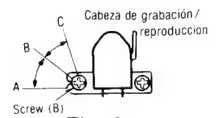


Fig. 3

Ajuste de fase de L-CH/R-CH

4. Efectuar las conexiones como muestra la Fig. 5.
5. Reproducir la señal de 8kHz desde la cinta de prueba (QZZCFM). Ajustar el tornillo. (B) de la Fig. 3 de forma que las agujas indicadoras de los dos EVM giren hacia el máximo y se obtenga una forma de onda como la indicada en la Fig. 6 sobre el osciloscopio.

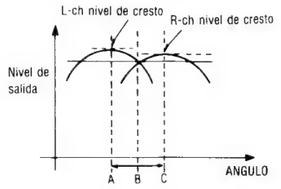


Fig. 4

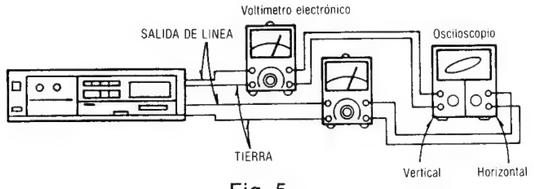


Fig. 5

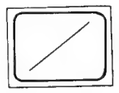


Fig. 6

Ⓒ Velocidad de la cinta

Condición:
- Modo de reproducción

Equipo:
- Contador digital electrónico
- Cinta de prueba...QZZCWAT

Exactitud de la velocidad de cinta

1. La conexión del equipo de prueba se muestra en Fig. 7.
2. Reproducir la cinta de prueba (QZZCWAT 3.000Hz), y suministrar una señal de reproducción al contador digital electrónico.
3. Medir esta frecuencia.
4. Sobre la base de 3.000Hz, determinar el valor de la exactitud mediante la siguiente fórmula:

$$\text{Exactitud de la velocidad de cinta} = \frac{f-3.000}{3.000} \times 100(\%)$$

donde f = valor medido

5. Tomar medida en la sección media de la cinta.

Valor normal: 0,33% (3000±10Hz)

6. Si el valor medido no está dentro del valor estándar, ajustarlo usando el ajuste de velocidad de cinta VR mostrado.

Nota: No utilizar destornilladores metálicos cuando ajuste la precisión de la velocidad de la cinta en este aparato.

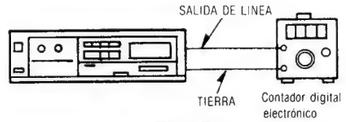


Fig. 7

Fluctuación de la velocidad de cinta

Efectuar las mediciones de la misma manera que antes (al comienzo, mitad y final de la cinta) y determinar la diferencia entre los valores máximo y mínimo. Calcular de la forma siguiente:

$$\text{Fluctuación de la velocidad de cinta} = \frac{f_1-f_2}{3.000} \times 100(\%)$$

f_1 = valor máximo,
f_2 = valor mínimo

Valor normal: menos de 1%

Ⓒ Respuesta de frecuencia de reproducción

Condición:
- Modo de reproducción

Equipo:
- EVM (Voltímetro electrónico)
- Osciloscopio
- Cinta de prueba...QZZCFM

1. La conexión del equipo de prueba se muestra en la Fig. 2.
2. Reproducir la cinta de prueba de respuesta de frecuencia (QZZCFM).
3. Medir el nivel de salida en 315Hz, 12,5kHz, 8kHz, 4kHz, 1kHz, 250Hz, 125Hz y 63Hz y comparar cada nivel de salida con 315Hz de frecuencia normal, en LINE OUT.
4. Efectuar las medidas para ambos canales.
5. Asegurarse de que el valor medido está comprendido dentro de la gama especificada en el gráfico de la respuesta de frecuencia (mostrado en la Fig. 8).

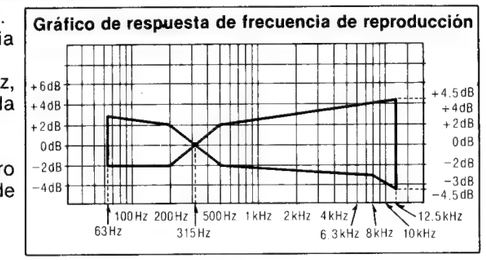


Fig. 8

Ⓓ Ganancia de reproducción

Condición:
- Modo de reproducción

Equipo:
- EVM (Voltímetro electrónico)
- Osciloscopio
- Cinta de prueba...QZZCFM

1. La conexión del equipo de prueba se muestra en la Fig. 2.
2. Reproduzca la porción de nivel de grabación estándard en la cinta de prueba (QZZCFM 315Hz) y, usando EVM (voltímetro electrónico), mida el nivel de salida en "LINE OUTs" (salidas de línea).
3. Efectuar las medidas para ambos canales.

Valor normal: 0,4V±0,5dB (0,02V)

Ajuste

1. Si el valor medido no está comprendido dentro del valor normal, ajustar VR5 (L-CH),VR6 (R-CH).
2. Despues del ajuste, comprobar de nuevo la "respuesta de frecuencia de reproducción".

Ⓔ Corriente de borrado

Condición:
- Modo de grabación

Equipo:
- EVM (Voltímetro electrónico)
- Osciloscopio
- Cinta de prueba...QZZCRZ para Metal

1. La conexión del equipo de prueba se muestra en la Fig. 9.
2. Insertar la cinta de prueba virgen de referencia metálica (QZZCRZ).
3. Apretar los botones de pausa y grabación.
4. Tomar la lectura del voltaje en EVM y calcular la corriente de borrado mediante la fórmula siguiente:

$$\text{Corriente de borrado (A)} = \frac{\text{Voltaje entre terminales de R301}}{1\ (\Omega)}$$

Valor normal: 155±15mA (Modo de cinta...Metal) (155±15mV)

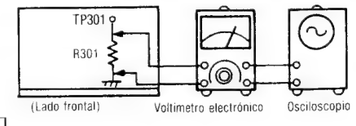


Fig. 9

5. Si el valor medido no está comprendido dentro del valor normal, ajustar de la forma siguiente:

Ajuste:

1. Cortocircuitar los puntos (A) y (B) en el tablero principal del circuito.
2. Efectuar la medida de la corriente de borrado.
3. Si la corriente de borrado es emnor que 140 mA, cortocircuitar el punto (B).
4. Si la corriente de borrado es superior a 170 mA,dejar en circuito abierto los puntos (A).

Ⓕ Respuesta de frecuencia total

Condición:
- Modo de reproducción/ grabación
- Control de nivel de entrada ...MAX

Equipo:
- EVM (Voltímetro electrónico)
- ATT
- Oscilador de AF
- Osciloscopio
- Resistor (600Ω)
- Cinta de prueba (cinta en blanco de referencia)
  ...QZZCRA para Normal
  ...QZZCRX para CrO_2
  ...QZZCRZ para Metal

Nota:

Antes de medir y ajustar la respuesta de frecuencia total, asegurarse de la respuesta de frecuencia de reproducción. (Para el método de medida, sírvase consultar la respuesta de frecuencia de reproducción).
(Se fija el compensador de grabación.)

1. Efectuar las conexiones tal como se muestra en la Fig. 11.
2. Insertar la cinta de prueba virgen de referencia normal (QZZCRA).
3. Aplicar una señal de 1kHz desde el oscilador de AF a través de ATT a LINE IN.
4. Ajustar el ATT de forma que el nivel de entrada sea de −20dB por debajo del nivel estándar de grabación (nivel estándar de grabación = 0VU).
5. Ajustar el oscilador de AF para generar señales de 50Hz, 100Hz, 200Hz, 500Hz, 1kHz, 4kHz, 8kHz y 12,5kHz y grabar, estas señales en la cinta de prueba.
6. Reproducir las señales grabadas en el paso 6, y comprobar si la curva de respuesta de frecuencia está dentro de los límites mostrados en el gráfico de respuesta de frecuencia total para las cintas normales (Fig. 10).
   (Si la curva está dentro de las especificaciones del gráfico, sequir con los pasos 7, 8 y 9).
   Si la curva no está dentro de las especificaciones del gráfico, ajustar de la forma siguiente:

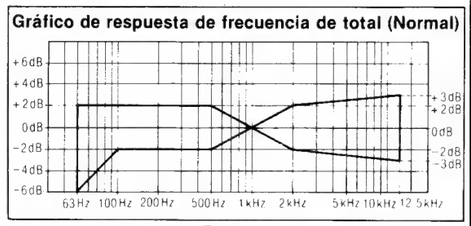


Fig. 10

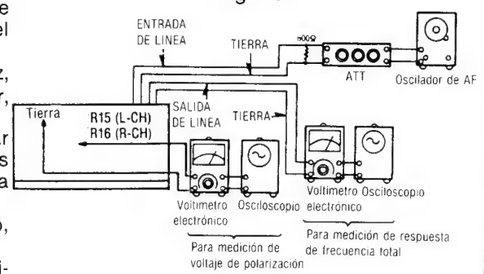


Fig. 11

Ajuste A:

Cuando la curva excede las especificaciones del gráfico de respuesta de frecuencia total (Fig. 10) tal como se muestra en la Fig. 12.

1) Aumentar la corriente de polarización girando VR301 (L-CH) y, VR302 (R-CH).
2) Repetir los pasos 5 y 6 para confirmación. (Seguir con los pasos 7, 8 y 9 si la curva está ahora dentro de las especificaciones del gráfico de la Fig. 10).
3) Si la curva todavía excede las especificaciones (Fig. 10), aumentar aún más la corriente de polarización y repetir los pasos 5 y 6.

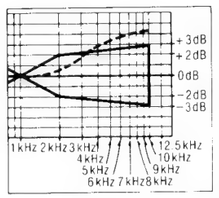


Fig. 12

Ajuste B:

Cuando la curva está por debajo de las especificaciones del gráfico de respuesta de frecuencia total (Fig. 10) tal como se muestra en la Fig. 13.

1) Reducir la corriente de polarización girando VR301 (L-CH) y VR302 (R-CH).
2) Repetir los pasos 5 y 6 para confirmación. (Seguir con los pasos 7, 8 y 9 si la curva está ahora dentro de las especificaciones del gráfico de la Fig. 10.)
3) Si la curva todavía cae por debajo de las especificaciones del gráfico (Fig. 10), reducir aún más la corriente de polarización y repetir los pasos 5 y 6.

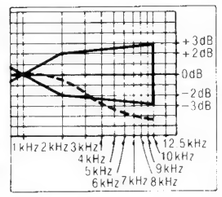


Fig. 13

7. Cambiar la cinta de prueba a QZZCRX y grabar señales de 50Hz, 100Hz, 200Hz, 500Hz, 1kHz, 4kHz, 8kHz, 10kHz y 15kHz. Luego, reproducir las señales y comprobar si la curva está dentro de los límites mostrados en el gráfico de respuesta de frecuencia total para las cintas CrO_2 (Fig. 14).
8. Cambiar la cinta de prueba a QZZCRZ, y grabar señales de 50Hz, 100Hz, 200Hz, 500Hz, 1kHz, 4kHz, 8kHz, 10kHz y 15kHz. Luego, reproducir las señales y comprobar si la curva está dentro de los limites mostrados en el gráfico de respuesta de frecuencia total para las cintas de Metal (Fig. 14).
9. Asegurarse de que las tensión de polarización sean aproximadamente las que se indican a continuación cuando el aparato esté colocado en un modo de cinta distinto.
   - Medir la tensión en la cabeza utilizando el EVM.
   - Lea el voltaje en los terminales del registor R15 (L-CH) [R16 (R-CH)] y calcule la corriente de polarizaciòn de la fòrmula siguiente.

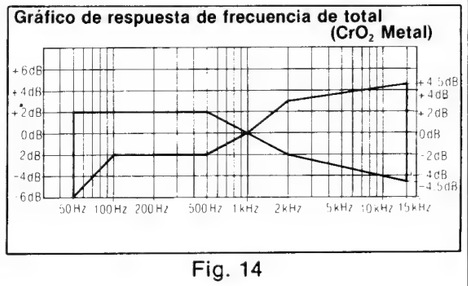


Fig. 14

$$\text{Corriente de polarizaciòn (A)} = \frac{\text{Valor leído en el EVM (V)}}{10\ (\Omega)}$$

VALOR NORMAL:
Unos 170 μA (posición: Normal)
Unos 200 μA (posición:CrO_2)
Unos 370 μA (posición: Metal)

G Ganancia total

Condición:
- Modo de reproducción/ grabación
- Controles del nivel de entrada ...MAX.
- Nivel de entrada normal:
  MIC ..... -72^{+5}_{-3}dB (0,25 mV)
  LINE IN ..... −24±4 dB (63 mV)

Equipo:
- EVM (Voltímetro electrónico)
- Oscilador de AF
- ATT
- Osciloscopio
- Resistor (600Ω)
- Cinta de prueba (cinta en blanco de referencia) ...QZZCRA para Normal

1. La conexión del equipo de prueba se muestra en la Fig. 15.
2. Cargar la cinta normal en blanco de referencia (QZZCRA).
3. Poner el aparato en el modo grabación.
4. Suministrar una señal 1kHz (−24dB) desde el oscilador de AF a través de ATT a LINE IN (ENTRADA DE LINEA).
5. Ajuster ATT hasta que el nivel del monitor en "LINE OUTs" sea 0,4V.
6. Reproduzca la cinta grabada y asegúrese de que el nivel de salida en "LINE OUTs" sea 0,4V.
7. Si el valor medido no es de 0,42V, ajustarlo con VR103 (L-CH), VR104 (R-CH).
8. Repetir desde el punto (2).

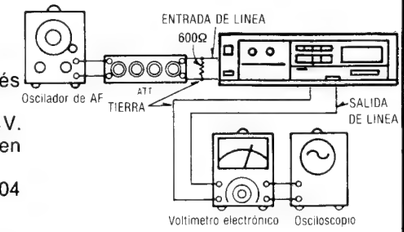


Fig. 15

H Medidor de nivel

Condición:
- Modo de grabación
- Controles del nivel de entrada ...MAX

Equipo:
- EVM (Voltímetro electrónico)
- ATT
- Oscilador de AF
- Osciloscopio
- Resistor (600Ω)

1. Comprobar la conexión del equipo que se muestra en la Fig. 15.
2. Colocar la unidad en el modo de grabación.
3. Suministrar una señal de 1kHz (−24dB) desde el oscilador de AF a través del ATT a la ENTRADA DE LINEA (LINE IN).

Ajuste a "−40 dB"

4. Ajustar ATT de forma que el nivel ajustado en el paso 3 se reduzca en 40 dB.
5. En este momento, comprobar si el indicador de −40 dB está iluminado a medias (intensidad luminosa intermedia entre intensidad máxima y apagado: ver la Fig. 16).
6. Si el indicador no esta iluminado a medias tal como se ha descrito en el paso 6, ajustar VR102.

Ajuste a "0 dB"

7. Volver a las condiciones del paso 3 (hacer que el nivel de salida en LINE OUT sea de 0,43 V±0,02 V).
8. En este momento, comprobar si el indicador de 0 dB está iluminado a medias (intensidad luminosa intermedia entre intensidad máxima y apagado: ver la Fig. 17).
9. Si no es así, ajustar VR201.
10. Repetir los ajustes y comprobaciones de los pasos 3, 4, 5, 6, 7, 8 y 9 dos o tres veces.

Fig. 16

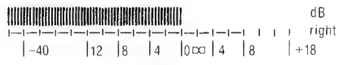


Fig. 17

I Circuito Dolby de de ruido (NR)

Condición:
- Modo de grabación
- Interruptor Dolby NR ...IN/OUT
- Interruptor selector del Dolby NR...B/C
- Controles del nivel de entrada...MAX

Equipo:
- EVM (Voltímetro electrónico)
- ATT
- Resistor (600Ω)
- Oscilador de AF
- Osciloscopio

Lado de grabación

- Comprobación de las caracteristicas del condificador tipo Dolby B.

1. Efectuar las conexiones segun se muestra en la Fig. 18.
2. Colocar la unidad en el modo de grabación (el interruptor selector NR está en OUT).
3. Aplicar una señal de 1kHz a LINE IN.
4. Ajustar el ATT de forma que el nivel de salida en el terminal 7 del IC401 (L-CH) e IC402 (R-CH) sea de 12,3mV.
5. El nivel de salida en el terminal 21 deberá ser de 0dB (375mV).
6. Colocar el interruptor selector NR en B, y asegurarse de que el nivel de la señal de salida en el terminal 21 del IC401 (L-CH) e IC402 (R-CH) sea de +6 dB±1,5 dB (753 mV).

7. Colocar el interruptor NR en OUT y ajustar la frecuencia a 5kHz. El nivel de la señal de salida en el terminal 21 deberá ser de 0dB (375mV).
8. Colocar el interruptor selector NR en B y asegurarse de que el nivel de la señal de salida en el terminal 21 del IC401 (L-CH) e IC402 (R-CH) sea de +8 dB±1,5 dB (948 mV).

• Comprobación de las características del codificador tipo Dolby C.

9. Repetir los pasos 1 a 5 anteriores.
10. Colocar el interruptor selector NR en C y asegurarse de que el nivel de la señal de salida en el terminal 21 del IC401 (L-CH) e IC402 (R-CH) sea de +11,5 dB±2 dB (1,4 V).
11. Colocar el interruptor selector NR en la posición OUT y ajustar la frecuencia a 5kHz. La señal de salida en el terminal 21 deberá ser de 0dB (375mV).
12. Colocar el interruptor selector NR en C, y asegurarse de que el nivel de la señal de salida del terminal 21 del IC401 (L-CH) e IC402 (R-CH) sea de +8,5 dB±2 dB (1 V).

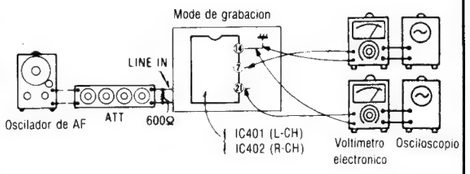


Fig. 18

Ajuste del tiempo de recuperación de ataque (circuit dbx)

Condición:
- Modo de grabación
- Controles del nivel de entrada...MAX
- Control del balance ...Centro

Equipo:
- EVM
- ATT
- Oscilador de AF
- Voltímetro de CC
- Selector de reducción de ruido...cinta dbx

1. Hacer las conexiones que se muestran en la Fig. 19, y suministrar una señal de 1kHz −27dB desde LINE IN. Colocar también el selector de reducción de ruido en la posición de cinta dbx.
2. Colocar la unidad en el modo de grabación, y ajustar ATT de forma que el nivel de la señal en C541 (L-CH) y C542 (R-CH) sea de 300mV.
3. Lee el voltaje en el voltímetro de CC.

Valor de referencia: 15±0,5 mV

4. Si el valor medido no está dentro del valor de referencia, ajustar VR101.

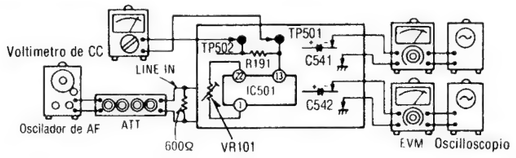


Fig. 19

Printed in Japan
850504530 Ⓗ M.S/A.H

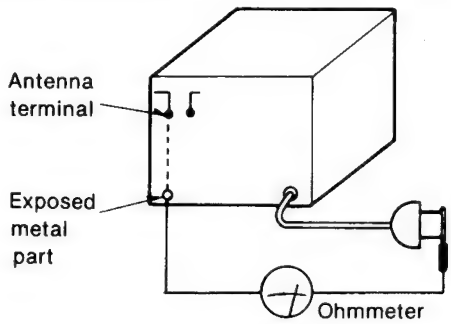
■ SAFETY PRECAUTION (This "safety precaution" is applied only in U.S.A.)

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

• INSULATION RESISTANCE TEST

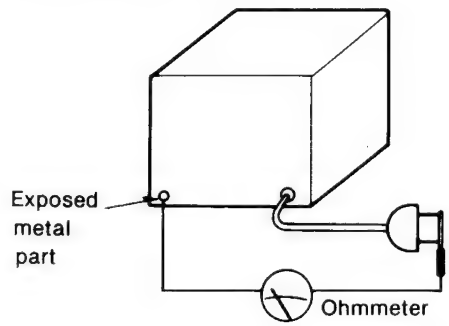
1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads antenna, control shafts, handle brackets, etc. Equipment with antenna terminals should read between 3MΩ and 5.2MΩ to all exposed parts. (Fig. A) Equipment without antenna terminals should read approximately infinity to all exposed parts. (Fig. B)

Note: Some exposed parts may be isolated from the chassis by design. These will read infinity.



(Fig. A)

Resistance = 3MΩ—5.2MΩ



(Fig. B)

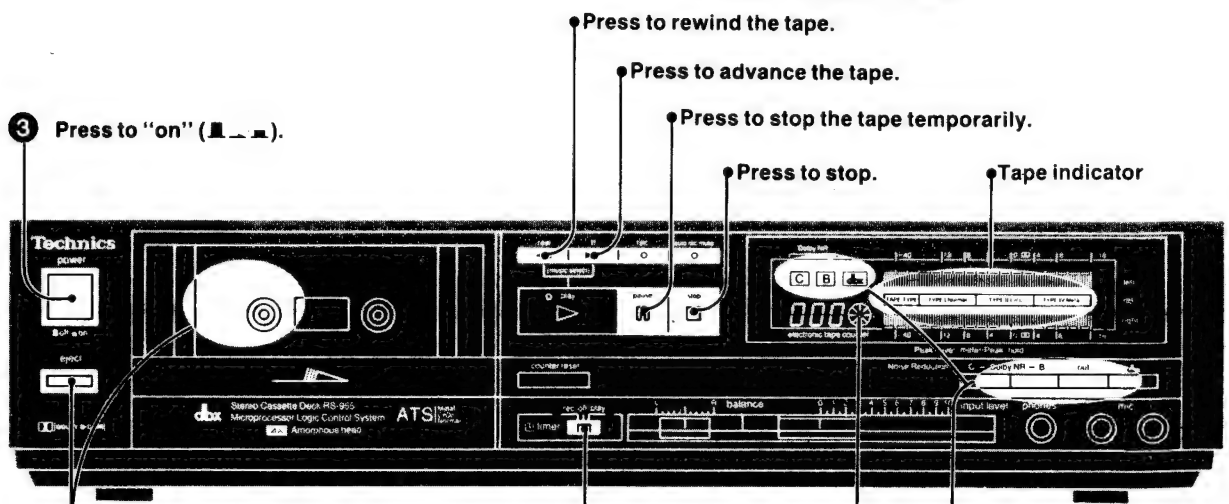
Resistance = Approx ∞

4. If the measurement is outside the specified limits, there is a possibility of a shock hazard. The equipment should be repaired and rechecked before it is returned to the customer.

■ OPERATIONS

STANDARD OPERATING PROCEDURES

Note:
To remove the cassette while the unit is recording or playing back (including the tune-select mode), be sure to first press the stop button and then press the eject button.
If only the eject button is pressed, without first pressing the stop button, this may cause the tape to become loosely wound or otherwise tangle the tape.



1 Insert the cassette.
Be sure the edge of the cassette where the tape can be seen faces down.
When the cassette is inserted and the cassette holder is closed, the tape indicator illuminates to indicate the type of tape.

Tape running display
The tape-running display will increase by 1 for each rotation.

2 Set to the "off" position.

4 Select the noise-reduction system.
The corresponding noise-reduction indicator illuminates depending on which button is pressed.

PLAYBACK

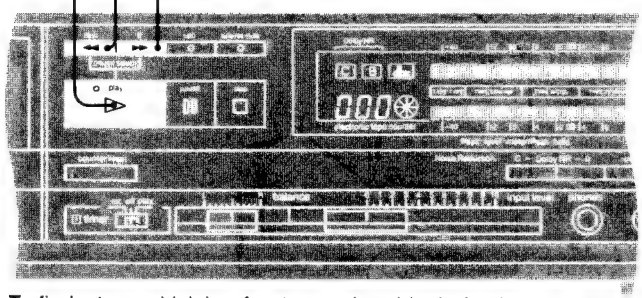
Tune selection

This feature is used to find the beginning of a tune, either before or after the present position of the tape.

❶ **Press.**
(Playback will begin.)

❷ **Press to listen to the previous tune.**
(The playback indicator will begin flashing rapidly, and the unit will begin searching for the beginning of the previous tune.)

❷ **Press to listen to the next tune.**
(The playback indicator will begin flashing rapidly, and the unit will begin searching for the beginning of the next tune.)



To find a tune which is a few tunes ahead (or before) on the tape, repeat step ❷.

The tune-select system will not function correctly under the following conditions:

- If there is 4 seconds or less between tunes (unrecorded space)
- If there is excessive noise between tunes
- If there is a very low-sound level place, or an unrecorded space, during a tune
- If the tape has been recorded by using fade-in and/or fade-out* techniques

***Fade-in and Fade-out**
Fade-in is a recording technique to gradually increase the sound (from 0 to the ordinary level) at the beginning of a recording, and fade-out is to gradually decrease the sound (from the ordinary level to 0) at the end of a recording.

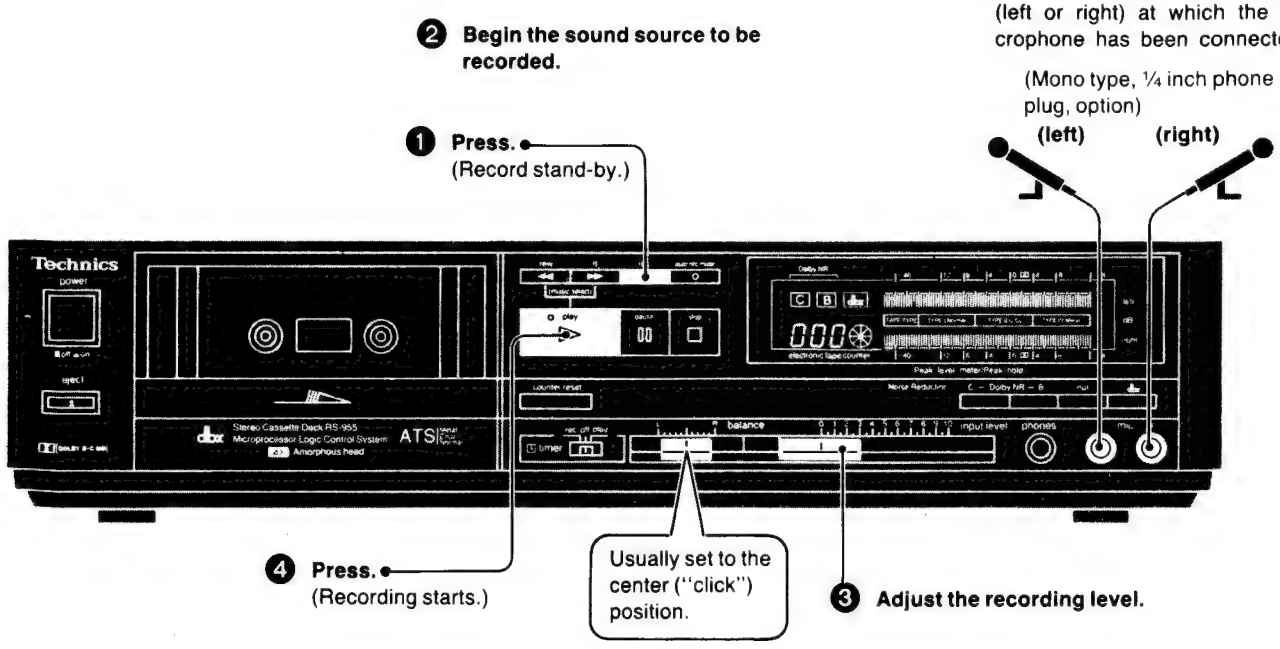
- Music select system manufactured under license of Starr. S.A., Bruxelles, Belguim.

RECORDING

Have you finished reading "STANDARD OPERATING PROCEDURES" on page 3?

When only one microphone is connected at the left or right, the line input at the connected side is cut off. When recording with one microphone, the line inputs at both sides are cut off once the balance control is slid to the side (left or right) at which the microphone has been connected.

(Mono type, ¼ inch phone plug, option)



Adjustment of the recording level

The number that you can use as a guide will vary depending upon the type of tape used and the type of noise-reduction system employed for the recording.

Noise Reduction (NR)	Normal Tape CrO_2 Tape	Metal Tape
Dolby NR B•C NR out	+6 dB	+8 dB
dbx	+8 dB	+12 dB

- The recording level can also be adjusted by the level bar illumination of the fluorescent level meter.

Record muting

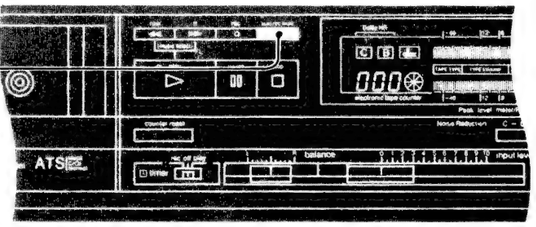
This is a feature which makes it possible to make a non-recorded portion on the tape while a recording is in progress.
This feature should be used at the following times:
- To avoid recording unwanted commercial announcements and to avoid recording the noise produced when the phono needle descends to a disc.

During recording...

To make the non-recorded portion of about 4 seconds between tunes:

- **Press once.**
  (After about 4 seconds, the unit will automatically change to the recording stand-by mode.)

To make a non-recorded portion of more than 4 seconds:
Press for more than 4 seconds.
(The unit will automatically change to the recording stand-by mode when the button is released.)



Erasing recorded sounds

When a recording is made, any sounds previously recorded on that portion of the tape are erased, and only the new recording remains. To erase recorded sounds without making a new recording, proceed as follows.

1. **Set to the minimum (0) position. (Input Level Control)**
2. **Press the "out" Button. (Noise Reduction Switch)**
3. **Begin recording in the usual way.**

■ DISASSEMBLY INSTRUCTIONS

Ref. No. 1	How to remove the case cover
Procedure 1	• Remove the 4 screws (❶~❹).

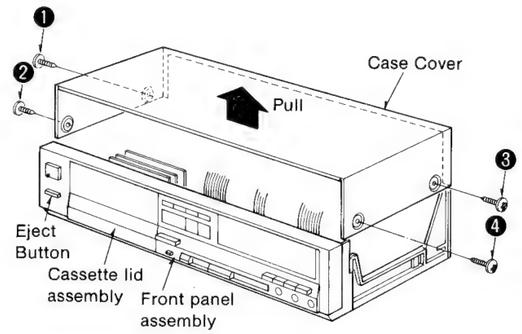


Fig. 1

Ref. No. 2	How to remove the main P.C.B.
Procedure 1 → 2	• Remove the screw (❶), and then remove the AC inlet angle. • Push the 4 tabs aside, and then pull down the back chassis. • Remove the 2 screws (❷, ❸). • Remove the 2 screws (❹, ❺), and then remove the earth plate. • Pull the main P.C.B. in the direction of arrow Ⓐ.

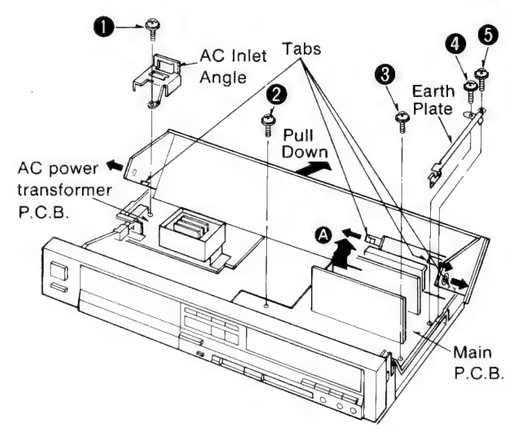


Fig. 2

Ref. No. 3	How to remove the meter P.C.B.
Procedure 1 → 3	• Remove the 5 screws (❶~❺), and then remove the meter angle. • Push the 4 tabs aside.

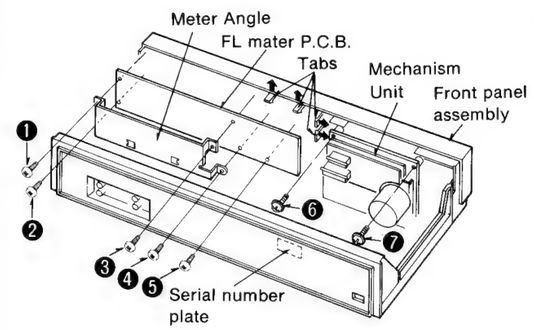


Fig. 3

Ref. No. 4	How to remove the mechanism unit
Procedure 1 → 4	• Push the eject button (see fig. 1). • Remove the 2 screws (❻, ❼) (see fig. 3). • Remove the 3 screws (❶~❸).

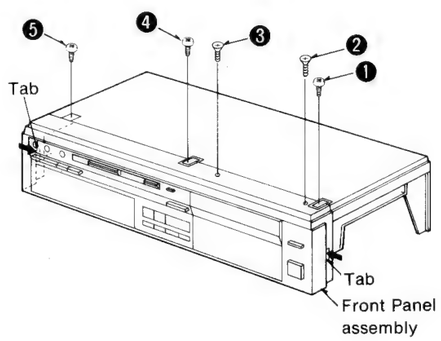
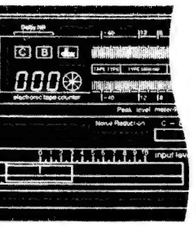


Fig. 4

Ref. No. 5	
Procedur 1 → 5	

*** Serial No**
- The seri



■ DISASSEMBLY INSTRUCTIONS

Ref. No. 1	How to remove the case cover
Procedure 1	• Remove the 4 screws (❶~❹).

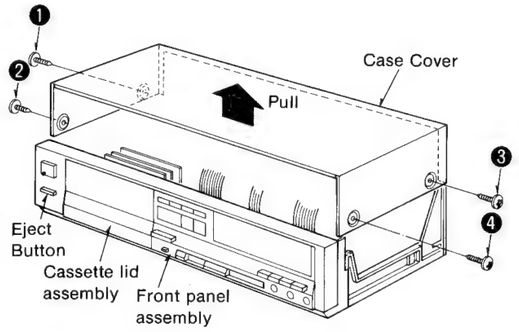


Fig. 1

Ref. No. 2	How to remove the main P.C.B.
Procedure 1 → 2	• Remove the screw (❶), and then remove the AC inlet angle. • Push the 4 tabs aside, and then pull down the back chassis. • Remove the 2 screws (❷, ❸). • Remove the 2 screws (❹, ❺), and then remove the earth plate. • Pull the main P.C.B. in the direction of arrow Ⓐ.

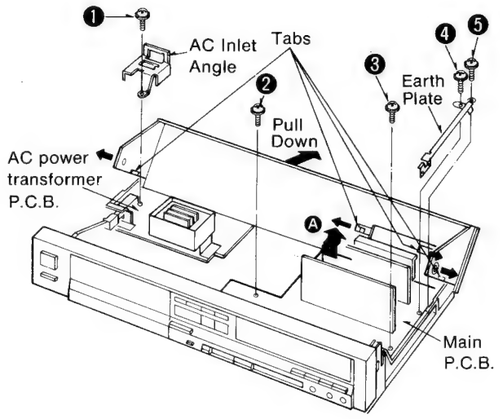


Fig. 2

Ref. No. 3	How to remove the meter P.C.B.
Procedure 1 → 3	• Remove the 5 screws (❶~❺), and then remove the meter angle. • Push the 4 tabs aside.

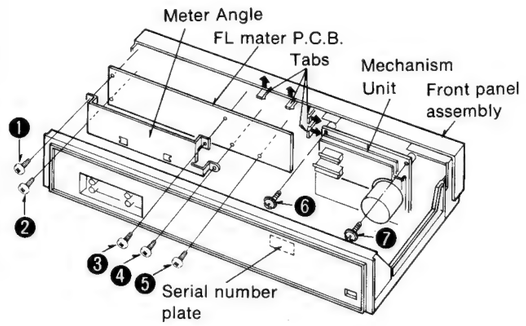


Fig. 3

Ref. No. 4	How to remove the mechanism unit
Procedure 1 → 4	• Push the eject button (see fig. 1). • Remove the 2 screws (❻, ❼) (see fig. 3). • Remove the 3 screws (❶~❸).

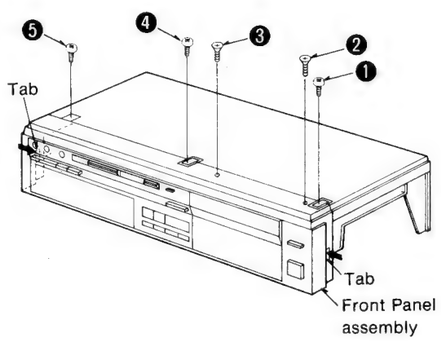
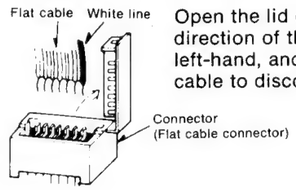


Fig. 4

Ref. No. 5	How to remove the front panel assembly
Procedure 1 → 5	• Remove the 3 screws (❶, ❹, ❺) (see fig. 4). • Remove the 4 flat cables (Ⓨ, J2, J3 and J4) (See fig. 5 and 6). • Remove the 2 connectors (record/playback head connector and erase head connector) (see fig. 5 and 7). • Push 2 tabs aside (see fig. 4).

How to remove flat cable



Open the lid of connector in the direction of the arrow as shown left-hand, and extract the flat cable to disconnect.

Fig. 6

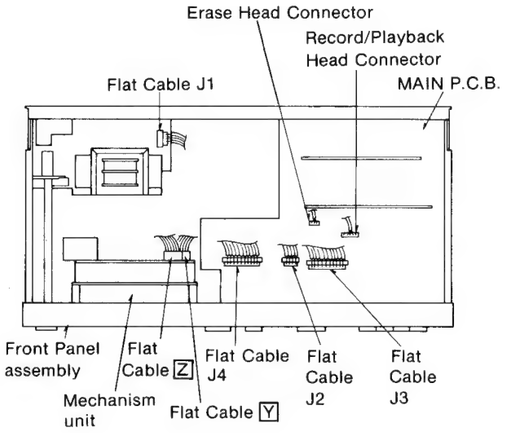


Fig. 5

- **How to remove the head lead connector**

  Pull the connector with pincers alternatively on the right and left sides as shown by the arrows.

- **How to insert the head lead connector**

  Match the projections of the connector with the marks printed on the P.C.B. and then insert the connector completely.

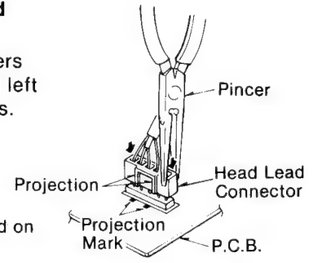


Fig. 7

*** Serial No. Indication**

- The serial number plate of this product is attached to back chassis. (shown in fig. 3).

■ MEASUREMENTS AND ADJUSTMENTS

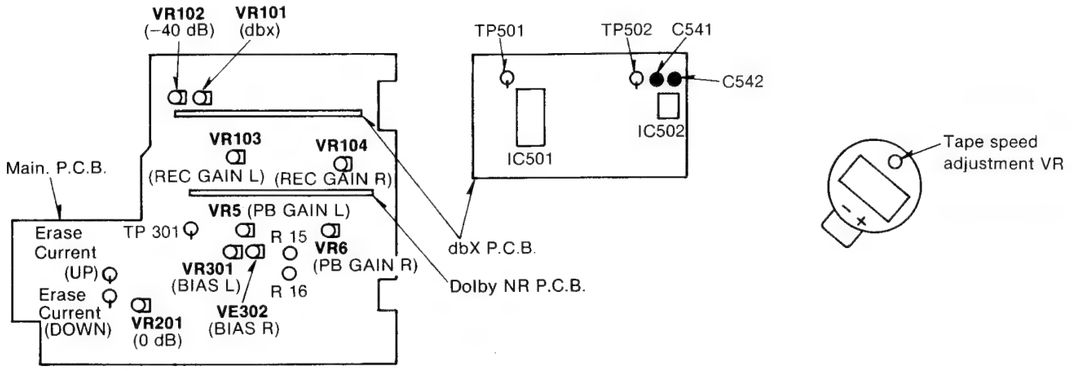


Fig. 1

NOTES: Set switches and controls in the following positions, unless otherwise specified.
- Make sure heads are clean
- Make sure capstan and pressure roller are clean
- Judgeable room temperature 20±5°C (68±9°F)
- Input level controls: Maximum
- Dolby NR switch: OUT
- Balance Control: Center

Ⓐ Head azimuth adjustment

Condition:
- Playback mode

Equipment:
- EVM (Electronic Voltmeter)
- Oscilloscope
- Test tape (azimuth)...QZZCFM

L-CH/R-CH output balance adjustment

1. Make connections as shown in fig. 2.

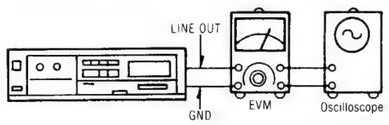


Fig. 2

2. Playback the 8kHz signal from the test tape (QZZCFM). Adjust screw (B) in fig. 3 for maximum output L-CH and R-CH levels. When the output levels of L-CH and R-CH are not at maximum at the same point adjust as follows.
3. Turn screw (B) shown in fig. 3 to find angles A and C (points where peak output levels for left and right channels are obtained). Then, locate angle B between angles A and C, i.e., point where L-CH and R-CH outputs are balanced. (Refer to figs. 3 and 4.)

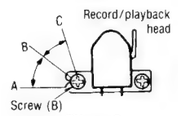


Fig. 3

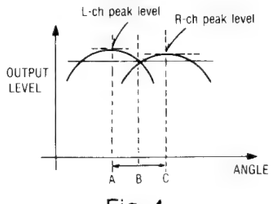


Fig. 4

L-CH/R-CH phase adjustment

4. Make connections as shown in fig. 5.
5. Playback the 8kHz signal from the test tape (QZZCFM). Adjust screw (B) shown in fig. 3 so that pointers of the two EVMs swing to maximum and a lissajous waveform as illustrated in fig. 6 is obtained on the oscilloscope.

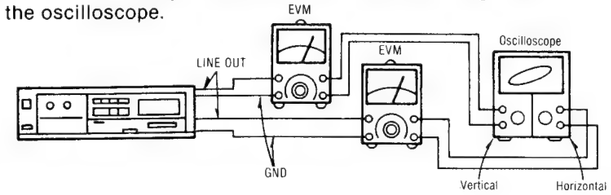


Fig. 5

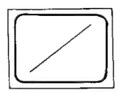


Fig. 6

Ⓑ Tape speed

Condition:
- Playback mode

Equipment:
- Digital frequency counter
- Test tape...QZZCWAT

Tape speed accuracy

1. Test equipment connection is shown in fig. 7.
2. Playback test tape (QZZCWAT 3,000Hz), and supply playback signal to the digital frequency counter.
3. Measure this frequency.
4. On the basis of 3,000Hz, determine value by following formula:

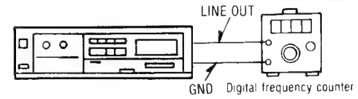


Fig. 7

$$\text{Tape speed accuracy} = \frac{f-3{,}000}{3{,}000} \times 100(\%)$$ where, f = measured value

5. Take measurement at middle section of tape.

Standard value: ±0.33% (3000±10Hz)

6. If measured value is not within the standard value, adjust it by using the tape speed adjustment VR shown in fig. 1.
Note: Please use non metal type screwdriver when you adjust tape speed accuracy on this unit.

Tape speed fluctuation

Make measurements in same manner as above (beginning, middle and end of tape), and determine the difference between maximum and minimum values and calculate as follows:

$$\text{Tape speed fluctuation} = \frac{f_1-f_2}{3{,}000} \times 100(\%)$$ f_1 = maximum value, f_2 = minimum value

Standard value: Less than 1%

Ⓒ Playback frequency response

Condition:
- Playback mode

Equipment:
- EVM (Electronic Voltmeter)
- Oscilloscope
- Test tape...QZZCFM

1. Test equipment connection is shown in fig. 2.
2. Playback the frequency response portion of test tape (QZZCFM).
3. Measure output level at 315Hz, 12.5kHz, 8kHz, 4kHz, 1kHz, 250Hz, 125Hz and 63Hz, and compare each output level with the standard frequency 315Hz, at LINE OUT.
4. Make measurements for both channels.
5. Make sure that the measured values are within the range specified in the frequency response chart (Shown in fig. 8).

Playback frequency response chart

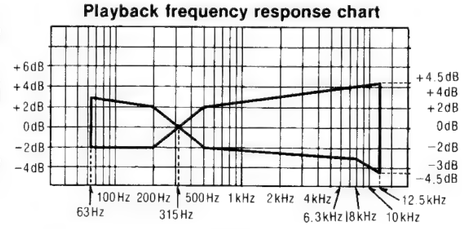


Fig. 8

Ⓓ Playback gain

Condition:
- Playback mode

Equipment:
- EVM (Electronic Voltmeter)
- Oscilloscope
- Test tape...QZZCFM

1. Test equipment connection is shown in fig. 2.
2. Playback standard recording level portion on test tape (QZZCFM 315Hz) and, using EVM, measure the output level at LINE OUTs.
3. Make measurements for both channels.

Standard value: 0.4V±0.5 dB (0.02V)

Adjustment

1. If the measured value is not within the standard, adjust VR5 (L-CH) or VR6 (R-CH). (See fig. 1.)
2. After adjustment, check "Playback frequency response" again.

Ⓔ Erase current

Condition:
- Record mode

Equipment:
- EVM (Electronic Voltmeter)
- Oscilloscope
- Test tape (reference blank tape) ...QZZCRZ for Metal

1. Test equipmen
2. Insert the meta
3. Press the reco
4. Read voltage formula:

Erase cur

Standar

5. If the measur following the

Adjustment

1. Short points (
2. Measure the e
3. If the erase cu
4. If the erase cu

Ⓕ Overall freque response

Note:
Before measuri response make s the method of m quency response

(Recording equal
1. Make conne
2. Insert the no
3. Supply a 1kH LINE IN.
4. Adjust ATT recording lev
5. Adjust the A 200Hz, 500H and record th
6. Playback the frequency re overall frequ (If the curve to steps 7, 8 If the curve i as follows;

Adjustment (A

When the curv overall specif response cha shown in fig.
1) Increase bi turning VR3 VR302 (R-C (See fig. 1.)
2) Repeat ste confirmatio steps 7, 8 curve is no charted spe
3) If the curve 10), increa steps 5 and

Tape speed adjustment VR

Oscilloscope

ANGLE

Ⓑ Tape speed

Condition:
- Playback mode

Equipment:
- Digital frequency counter
- Test tape...QZZCWAT

Tape speed accuracy

1. Test equipment connection is shown in fig. 7.
2. Playback test tape (QZZCWAT 3,000Hz), and supply playback signal to the digital frequency counter.
3. Measure this frequency.
4. On the basis of 3,000Hz, determine value by following formula:

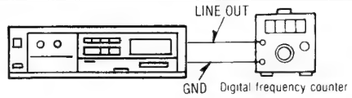


Fig. 7

$$\text{Tape speed accuracy} = \frac{f-3{,}000}{3{,}000} \times 100(\%)$$ where, f = measured value

5. Take measurement at middle section of tape.

Standard value: ±0.33% (3000±10Hz)

6. If measured value is not within the standard value, adjust it by using the tape speed adjustment VR shown in fig. 1.
   Note: Please use non metal type screwdriver when you adjust tape speed accuracy on this unit.

Tape speed fluctuation

Make measurements in same manner as above (beginning, middle and end of tape), and determine the difference between maximum and minimum values and calculate as follows:

$$\text{Tape speed fluctuation} = \frac{f_1-f_2}{3{,}000} \times 100(\%)$$ f_1 = maximum value, f_2 = minimum value

Standard value: Less than 1%

Ⓒ Playback frequency response

Condition:
- Playback mode

Equipment:
- EVM (Electronic Voltmeter)
- Oscilloscope
- Test tape...QZZCFM

1. Test equipment connection is shown in fig. 2.
2. Playback the frequency response portion of test tape (QZZCFM).
3. Measure output level at 315Hz, 12.5kHz, 8kHz, 4kHz, 1kHz, 250Hz, 125Hz and 63Hz, and compare each output level with the standard frequency 315Hz, at LINE OUT.
4. Make measurements for both channels.
5. Make sure that the measured values are within the range specified in the frequency response chart (Shown in fig. 8).

Playback frequency response chart

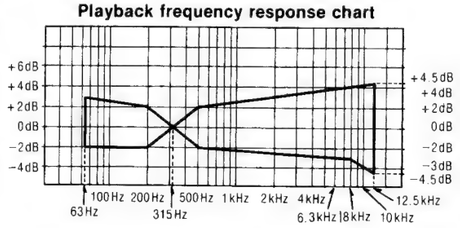


Fig. 8

Ⓓ Playback gain

Condition:
- Playback mode

Equipment:
- EVM (Electronic Voltmeter)
- Oscilloscope
- Test tape...QZZCFM

1. Test equipment connection is shown in fig. 2.
2. Playback standard recording level portion on test tape (QZZCFM 315Hz) and, using EVM, measure the output level at LINE OUTs.
3. Make measurements for both channels.

Standard value: 0.4V±0.5 dB (0.02V)

Adjustment

1. If the measured value is not within the standard, adjust VR5 (L-CH) or VR6 (R-CH). (See fig. 1.)
2. After adjustment, check "Playback frequency response" again.

Ⓔ Erase current

Condition:
- Record mode

Equipment:
- EVM (Electronic Voltmeter)
- Oscilloscope
- Test tape (reference blank tape)
  ...QZZCRZ for Metal

1. Test equipment connection is shown in fig. 9.
2. Insert the metal tape.
3. Press the record and pause buttons.
4. Read voltage on EVM and calculate erase current by following formula:

$$\text{Erase current (A)} = \frac{\text{Voltage across resistor R301}}{1\ (\Omega)}$$

Standard value: 155±15 mA (Metal) (155±15 mV)

5. If the measured value is not within the standard value adjust it by following the adjustment instructions.

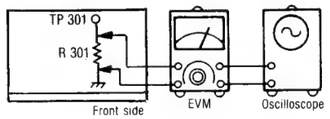


Fig. 9

Adjustment

1. Short points (A) and (B) on the main circuit board. (See fig. 1)
2. Measure the erase current.
3. If the erase current is less than 140 mA, open the DOWN point (B).
4. If the erase current is more than 170 mA, open the UP point (A).

Ⓕ Overall frequency response

Condition:
- Record/playback mode
- Input level controls...MAX

Equipment:
- EVM (Electronic Voltmeter)
- ATT
- AF oscillator
- Oscilloscope
- Resistor (600Ω)
- Test tape (reference blank tape)
  ...QZZCRA for Normal
  ...QZZCRX for CrO_2
  ...QZZCRZ for Metal

Note:

Before measuring and adjusting, the overall frequency response make sure of the playback frequency response (For the method of measurement, please refer to the playback frequency response).

(Recording equalizer is fixed)

1. Make connections as shown in fig. 11.
2. Insert the normal reference blank test tape (QZZCRA).
3. Supply a 1kHz signal from the AF oscillator through ATT to LINE IN.
4. Adjust ATT so that input level is −20dB below standard recording level (standard recording level = 0 VU).
5. Adjust the AF oscillator frequency to 1kHz, 50Hz, 100Hz, 200Hz, 500Hz, 4kHz, 8kHz, 10kHz and 12.5kHz signals, and record these signals on the test tape.
6. Playback the signals recorded in step 6, and check if the frequency response curve is within the limits shown in the overall frequency response chart for normal tapes (fig. 10). (If the curve is within the charted specifications, proceed to steps 7, 8 and 9.)
   If the curve is not within the charted specifications, adjust as follows;

Overall frequency response chart (Normal)

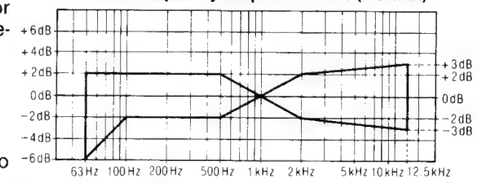


Fig. 10

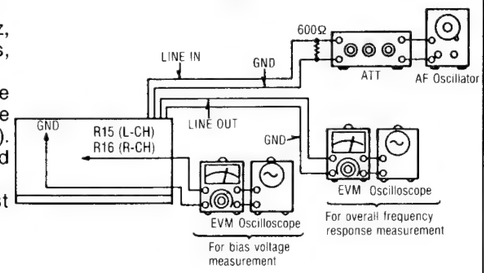


Fig. 11

Adjustment (A):

When the curve exceeds the overall specified frequency response chart (fig. 10) as shown in fig. 12.

1) Increase bias current by turning VR301 (L-CH) and VR302 (R-CH). (See fig. 1.)
2) Repeat steps 5 and 6 for confirmation (Proceed to steps 7, 8 and 9 if the curve is now within the charted specifications as shown fig. 10.)
3) If the curve still exceeds the specifications (fig. 10), increase bias current further and repeat steps 5 and 6.

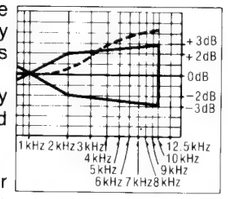


Fig. 12

Adjustment (B):

When the curve falls below the overall specified frequency response chart (fig. 10) as shown in fig. 13.

1) Reduce bias current by turning VR301 (L-CH) and VR302 (R-CH).
2) Repeat steps 5 and 6 for confirmation (Proceed to steps 7, 8 and 9 if the curve is now within the charted specifications as shown fig. 10.)
3) If the curve still falls below the charted specifications (fig. 10), reduce bias current further and repeat steps 5 and 6.

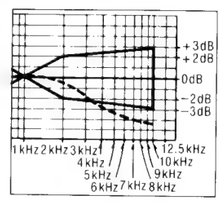


Fig. 13

7. Insert the CrO_2 tape.
8. Change test tape to CrO_2 reference blank test tape (QZZCRX), and record 1 kHz, 50 Hz, 100 Hz, 200 Hz, 500 Hz, 4 kHz, 8 kHz, 10 kHz and 15 kHz signals. Then, playback the signals and check if the curve is within the limits shown in the overall frequency response chart for CrO_2 tapes (fig. 14).
9. Change test tape to metal reference blank test tape (QZZCRZ), and record 1 kHz, 50 Hz, 100 Hz, 200 Hz, 500 Hz, 4 kHz, 8kHz, 10 kHz, 12.5 kHz and 15 kHz signals. Then, playback the signals and check if the curve is within the limits shown in the overall frequency response chart for metal tapes (fig. 14).
10. Confirm that bias currents are approximately as follows when the UNIT is set at different tape mode.
    - Read voltage at the terminals of resistor R15 (L-CH) {R16 (R-CH)}, and calculate bias current by following formula:

$$\text{Bias current (A)} = \frac{\text{Value read on EVM (V)}}{10\ (\Omega)}$$

Reference value:	**around 170 μA (Normal position)** **around 200μA (CrO_2 position)** **around 370μA (Metal position)**

Overall frequency response chart (CrO_2, Metal)

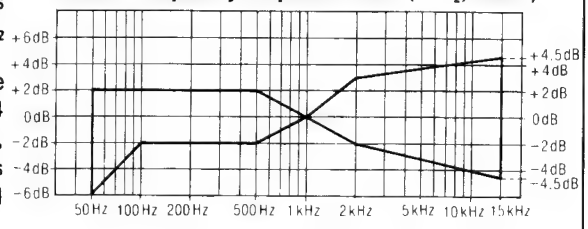


Fig. 14

Ⓖ Overall gain

Condition:
- Record/playback mode
- Input level controls...MAX
- Standard input level;
  MIC ..... -72^{+5}_{-3} dB (0.25 mV)
  LINE IN ..... −24±4 dB (63 mV)

Equipment:
- EVM (Electronic Voltmeter)
- ATT
- Resistor (600Ω)
- Test tape (reference blank tape) ...QZZCRA for Normal
- AF oscillator
- Oscilloscope

1. Test equipment connection is shown in fig. 15.
2. Insert the normal reference blank tape (QZZCRA).
3. Place UNIT into record mode.
4. Supply a 1 kHz signal through ATT (−24 dB) from AF oscillator, to LINE IN.
5. Adjust ATT until monitor level at LINE OUT becomes 0.4 V±0.5 dB (0.02 V)
6. Playback recorded tape, and make sure that the output level at LINE OUT becomes 0.4 V±0.5 dB (0.02 V)
7. If measured value is not 0.4 V±0.5 dB (0.02 V), adjust it by using VR103 (L-CH) or VR104 (R-CH).
8. Repeat from step (2).

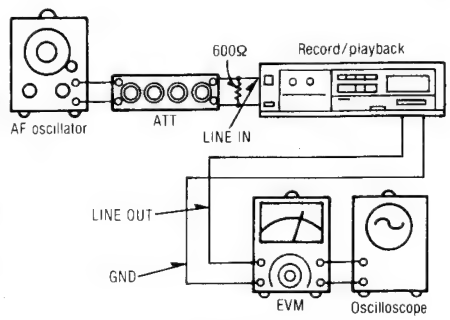


Fig. 15

Ⓗ Fluorescent meter

Condition:
- Record mode
- Input level controls...MAX

Equipment:
- EVM (Electronic Voltmeter)
- ATT
- Resistor (600Ω)
- AF oscillator
- Oscilloscope

1. Make connections as shown in fig. 16.
2. In the recording pause mode, apply 1 kHz (−24 dB) to LINE IN.
3. Adjust ATT so that output level at LINE OUT is 0.4 V±0.5 dB (0.02 V).

−40 dB adjustment

4. Adjust ATT so that the level adjusted at step 3 is reuced by 40 dB.
5. At this time, check that −40 dB indicator is dimmed (intermediate brightness between full brightness and light-out: See fig. 17).
6. If the indicator is not lighted halfway as described in step 6, adjust VR102.

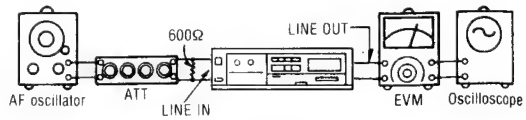


Fig. 16

0 dB adjustment

7. Restore the condition of step 3 (set output level to 0.4V±0.5dB (0.02V) at LINE OUT.
8. At this time, check that 0 dB indicator is dimmed (intermediate brightness between full brightness and light-out (See fig. 18.)
9. If improper, adjust VR201.
10. Repeat adjustments at steps 3, 4, 5, 6, 7. 8 and 9 two or three times.

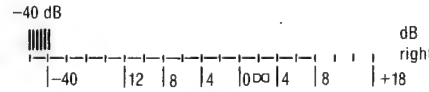


Fig. 17

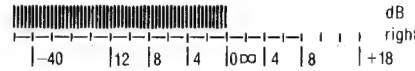


Fig. 18

❶ Dolby NR circuit

Condition:
- Record mode
- Dolby NR switch...IN/OUT
- Dolby NR select switch ...B/C
- Input level controls...MAX

Equipment:
- EVM (Electronic Voltmeter)
- ATT
- Resistor (600Ω)
- AF oscillator
- Oscilloscope

Record side

• Check of the Dolby-B type encoder characteristics

1. Make connections as shown in fig. 19.
2. Set the unit to the record mode. (NR select switch is OUT.)
3. Apply a 1kHz signal to LINE IN.
4. Adjust the ATT so that the output level at Pin 7 of IC 401 (L-CH) and IC 402 (R-CH) is 12.3 mV.
5. The output level at pin 21 should be 0dB. (375mV).
6. Set the NR select switch to B, and make sure that the output signal level at pin 21 of IC 401 (L-CH) and IC 402 (R-CH) is +6±1.5 dB. (753 mV)
7. Set the NR select switch to OUT, and adjust the frequency to 5kHz. The output signal level at pin 21 should be 0dB. (375mV).
8. Set the NR select switch to B and make sure that the output signal level at pin 21 of IC 401 (L-CH) and IC 402 (R-CH) is +8±1.5dB. (948mV)

• Check to Dolby-C type encoder characteristics

1. Repeat steps 1-5 above.
2. Set the NR select switch to C and make sure that the output signal level at pin 21 of IC 401 (L-CH) and IC 402 (R-CH) is +11.5±2dB. (1.4V)
3. Set the NR select switch to OUT and adjust the frequency to 5kHz. The output signal at pin 21 should be 0dB.
4. Set the NR select switch to C and make sure that the output signal level at pin 21 of IC 401 (L-CH) and IC 402 (R-CH) is +8.5±2dB. (1V)

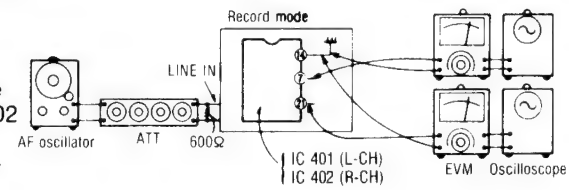


Fig. 19

❷ Attack recovery time adjustment (dbx circuit)

Condition:
- Record mode
- Input level control...MAX
- Noise reduction selector ...dbx

Equipment:
- EVM (Electronic Voltmeter)
- ATT
- AF oscillator
- DC voltmeter

1. Make the connections as shown in fig. 20 and apply 1kHz −27dB signal from LINE IN, and set the noise reduction selector to dbx position.
2. Set the unit to record mode, adjust ATT so that the signal level at C541 (L-CH) and C542 (R-CH) is 300mV.
3. Read voltage on DC volt meter.

Reference value: 15±0.5mV

4. If measured value is not within reference, adjust VR101 (shown in fig. 1).

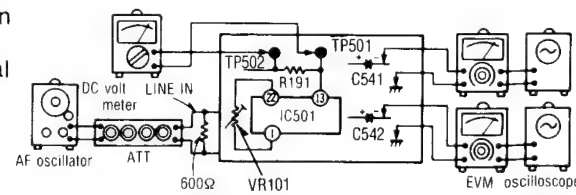
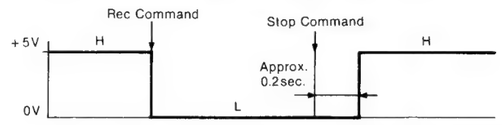
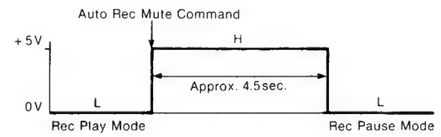
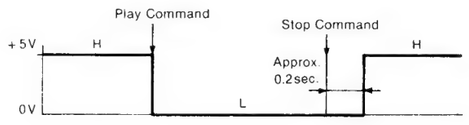
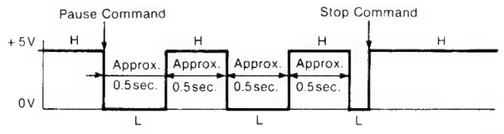
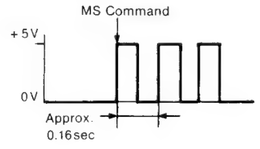
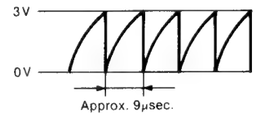
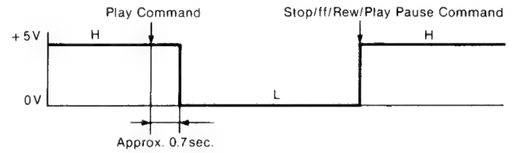
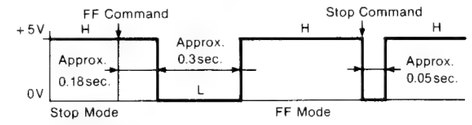
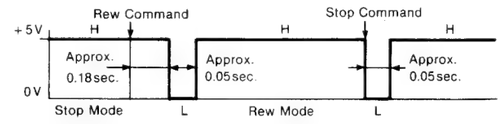
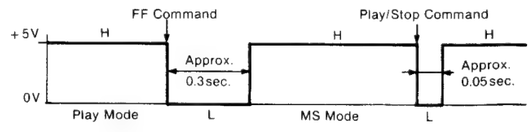
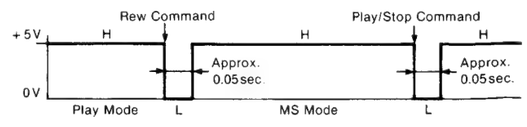


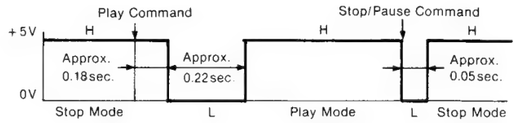
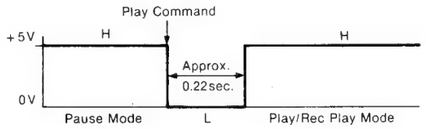
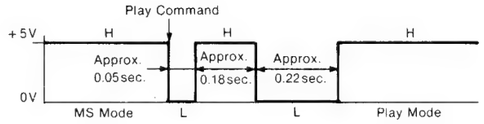
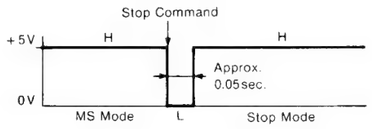
Fig. 20

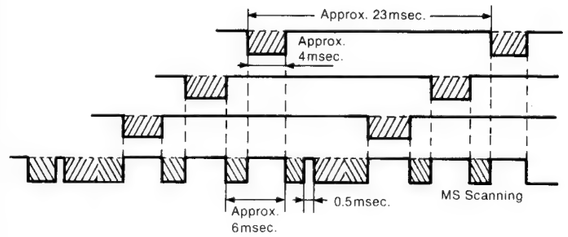
■ MICROCOMPUTER TERMINAL FUNCTION AND WAVE FORM (IC901: LM6417E1825)

* This micro-computer is used for mechanical operation.

Terminal No.	Symbol	Name	Function/operation
1.	PDϕ	Rec Indication Output	• "L" level on receiving REC command. • "H" level Apporx. 0.2sec. after STOP command. • "L" level immediately after power ON in Timer REC. 
2.	PD1	Rec Mute	• In REC PAUSE mode, "H" with AUTO REC MUTE button pressed; "L" with the button released. • In REC play mode, (1) "H" with AUTO REC MUTE button pressed; the mode changes to REC PAUSE, Approx. 4.5sec. later, and then the level is "L".  (2) When AUTO REC MUTE button is pressed for Approx. 4.5sec. or over, the mode changes to REC PAUSE with AUTO REC MUTE button released, and then the level is "L". (3) When PLAY button is pressed within Approx. 4.5sec. after pressing AUTO REC MUTE button, the mode changes to REC PLAY, and then the level is "L".
3.	PD2	——	• Non Connection.
4.	PD3	Play Indication Output	• "L" on receiving play command. • "H" Approx. 0.2sec. after STOP command. • "L" immediately after POWER ON in Timer Play. 
		Pause Indication Output	• "L" and "H" are repeated at Approx. 1sec. cycle on receiving PAUSE command. • "H" on receiving STOP command. 
		MS Indication Output	• "L" and "H" are repeated at Approx. 0.16sec. cycle on receiving MS command. 

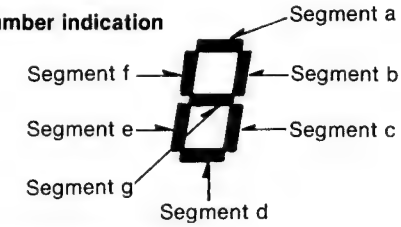
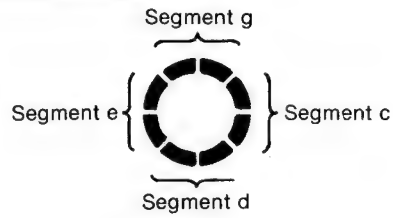
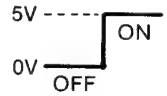
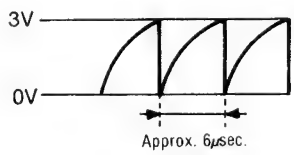
Terminal No.	Symbol	Name	Function/operation
5.	OSC	Clock Oscillation	• Clock oscillation of about 120kHz. **Note:** Do not connect anything to this terminal during other measurement because it will be otherwise affected by the probe. 
6.	PEϕ	Audio Muting	• Shifted from STOP to PLAY, "L" Approx. 0.7sec. after PLAY command. • Shifted from PAUSE to PLAY, "L" Approx. 0.5sec. after PLAY command. • Shifted from STOP to REC PAUSE, "L" Approx. 0.5sec. after REC command. • Shifted from MS to PLAY, "L" Approx. 0.8sec. after PLAY command. 
7.	PE1	Motor Output	• "H" in STOP mode, "L" in other modes.
8.	PE2	FF/REW Plunger Output	• "L" for a short time during FF/REW/MS changeover. (1) STOP → FF → STOP  (2) STOP → REW → STOP  (3) PLAY → MS (FF) → PLAY/STOP  (4) PLAY → MS (REW) → PLAY/STOP 

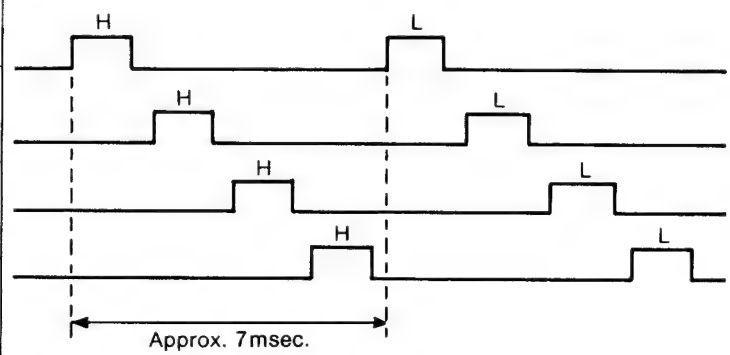
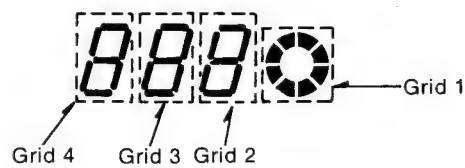
Terminal No.	Symbol	Name	Function/operation
9.	PE3	PLAY Plunger Output	• "L" for a short time during PLAY/REC PLAY/MS changeover. (1) STOP → PLAY → STOP/PAUSE  (2) PAUSE/REC PAUSE → PLAY/REC PLAY  (3) MS (FF/REW) → PLAY  (4) MS (FF/REW) → STOP 
10.	TEST	TEST	• Connection to GND.
11.	V_{SS}	——	• Connection to GND.
12.	INT	Reel Table Pulse Input	• Rotation of reel table (with ring, magnet) is detected by Hall IC (DN6838-S) to judge the tape end. • Rectangular wave input in PLAY, FF, REW, MS.
13.	RST	Reset Terminal	• Used to reset the microcomputer when power is thrown in. • Reset at "L" level (0.3 volt or less).
14.	V_{DD}	Power Supply Terminal	• Operative on 5.2 volts.
15.	PAϕ	Key Input [REW (S706) TIMER (S1)]	• Input of REW, Timer REC, MS, FF/REW switch. • The above-mentioned inputs are read in accordance with PCϕ, PC1, PC2, PC3 scanning.
16.	PA1	Key Input [FF (S707) TIMER (S1) PLAY (S901)]	• Input of FF, Timer PLAY, switch. • The above-mentioned inputs are read in accordance with PCϕ, PC1, PC2 scanning.

Terminal No.	Symbol	Name	Function/operation
17.	PA2	Key Input [PAUSE (S708) REC (S710) AUTO REC MUTE (S705) REC INH. (S904)]	• Input of PAUSE, REC, AUTO REC MUTE, REC INH. switch. • The above-mentioned inputs are read in accordance with PCϕ, PC1, PC2, PC3 scanning.
18.	PA3	Key Input [PLAY (S709) STOP (S711)]	• Input of PLAY, STOP switch. • The above-mentioned inputs are read in accordance with PC1, PC2 scanning.
19.	PCϕ	Input Switch Scanning	
20.	PC1		
21.	PC2		
22.	PC3		**Note:** (1) During scan signal measurement, dull up between pins ⑲~㉒) and V_{DD} with about 10kΩ resistance. (2) There are 2 types of scans of PC3. (For MS detection)

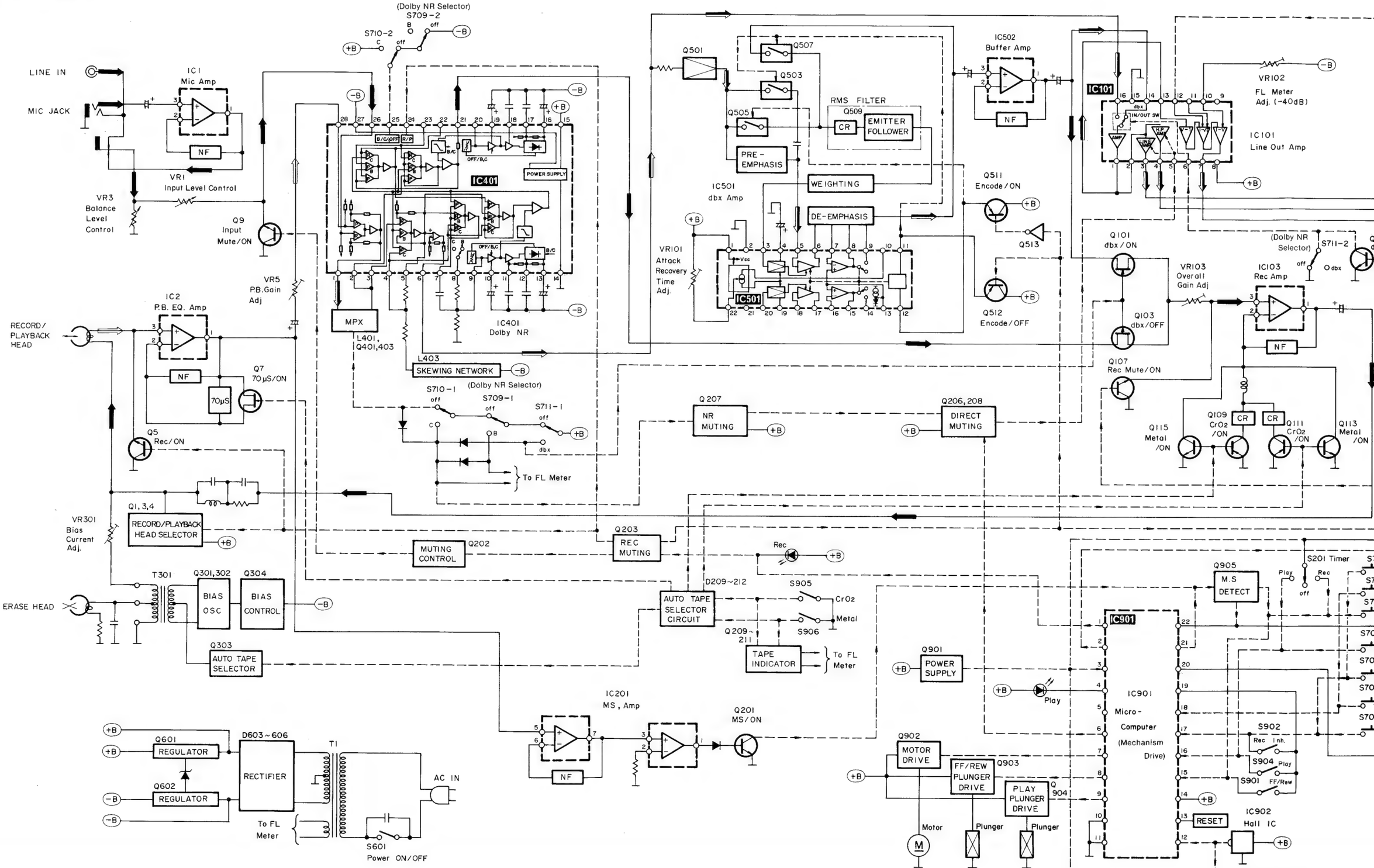
(IC701: LM6417E589)

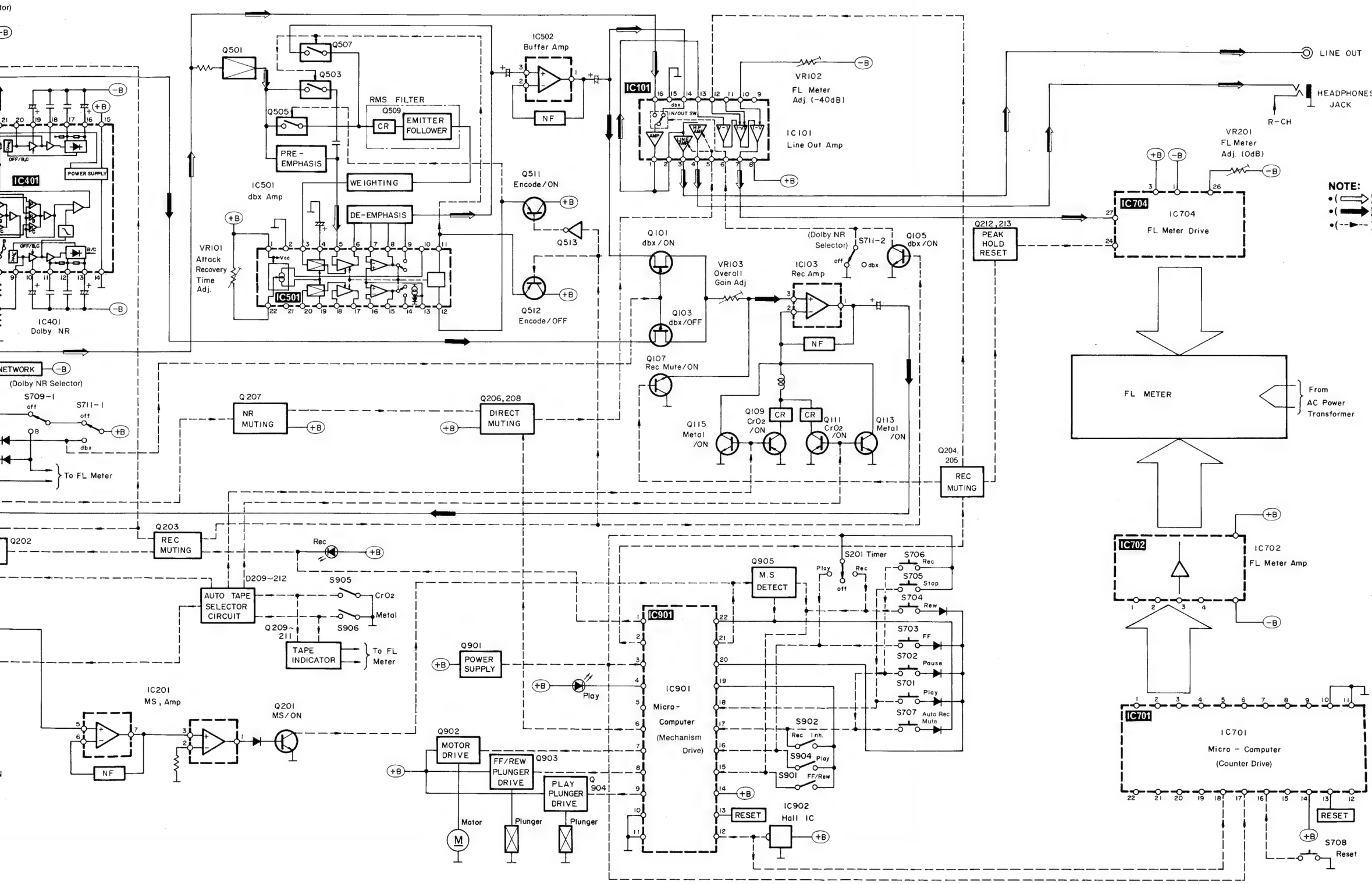
* This micro-computer is used for tape counter operation.

Terminal No.	Symbol	Name	Function/operation
1.	PDϕ	FL Counter Segment a	**Number indication**  **Running indication**  
2.	PD 1	FL Counter Segment b	
3.	PD 2	FL Counter Segment c	
4.	PD 3	FL Counter Segment d	
5.	OSC	Oscillation Terminal	• Clock oscillation of about 120 kHz.  Note) Do not connect anything to this terminal during other measurement because it will be otherwise affected by the probe.
6.	PEϕ	FL Counter Segment e	• Refer to PD ϕ~PD 3.
7.	PE 1	FL Counter Segment f	
8.	PE 2	FL Counter Segment g	
9.	PE 3	————	• Non connection.
10.	TEST	TEST	• Connection to GND.
11.	Vss	————	• Connection to GND.
12.	INT	————	• Non connection.
13.	RST	Reset Terminal	• Used to reset the microcomputer when power is thrown in. • Reset at "L" level (0.3 VDD or less).

Terminal No.	Symbol	Name	Function/operation
14.	V_{DD}	Power Supply Terminal	• Operative on approx. 5.2 volts.
15.	PAϕ	————	• Non connection
16.	PA 1	Counter Reset Input	• In "L" level, counter indication is reset to 888
17.	PA 2	Counter Up/Down Input	• Up counting with "H" level. • Down counting with "L" level.
18.	PA 3	Reel Table Pulse	• The rotation of reel table (with ring magnet) is detected by Hall IC (DN 6838-S), and the pulses are used to carry up or down for the counter. • With the takeup reel table rotated twice, the count number changes, and with it rotated 1/2, the running indication changes by one.
19.	PCϕ	FL Grid 1 & Input Scan	
20.	PC 1	FL Grid 2 & Input Scan	
21.	PC 2	FL Grid 3 & Input Scan	
22.	PC 3	FL Grid 4 & Input Scan	

■ BLOCK DIAGRAM




IC401
Dolby NR
POWER SUPPLY
NETWORK
(Dolby NR Selector)
S709-1
S711-1
To FL Meter
Q501
Q507
Q503
Q505
RMS FILTER
Q509
CR
EMITTER FOLLOWER
PRE-EMPHASIS
WEIGHTING
DE-EMPHASIS
IC501
dbx Amp
VR101
Attack Recovery Time Adj.
IC502
Buffer Amp
NF
IC101
Line Out Amp
VR102
FL Meter Adj. (-40dB)
LINE OUT
HEADPHONES JACK
R-CH
VR201
FL Meter Adj. (0dB)
IC704
FL Meter Drive
Q212,213
PEAK HOLD RESET
Q511
Encode/ON
Q513
Q512
Encode/OFF
Q101
dbx/ON
Q103
dbx/OFF
VR103
Overall Gain Adj
IC103
Rec Amp
(Dolby NR Selector)
S711-2
Q105
dbx/ON
Q107
Rec Mute/ON
Q109
CrO2 /ON
Q111
CrO2 /ON
Q113
Metal /ON
Q115
Metal /ON
Q204, 205
REC MUTING
FL METER
From AC Power Transformer
Q207
NR MUTING
Q206,208
DIRECT MUTING
Q202
Q203
REC MUTING
Rec
D209~212
AUTO TAPE SELECTOR CIRCUIT
S905
CrO2
Metal
S906
Q209~211
TAPE INDICATOR
To FL Meter
IC201
MS, Amp
Q201
MS/ON
Q901
POWER SUPPLY
Play
IC901
Micro-Computer (Mechanism Drive)
Q902
MOTOR DRIVE
Q903
FF/REW PLUNGER DRIVE
Q904
PLAY PLUNGER DRIVE
Motor
Plunger
Plunger
Q905
M.S DETECT
S201 Timer
Play
Rec
off
S706 Rec
S705 Stop
S704 Rew
S703 FF
S702 Pause
S701 Play
S707 Auto Rec Mute
S902 Rec Inh.
S904 Play
S901 FF/Rew
RESET
IC902
Hall IC
IC702
IC702
FL Meter Amp
IC701
IC701
Micro - Computer
(Counter Drive)
RESET
S708
Reset
NOTE:
•(⟹):Playback signal.
•(➡):Record signal.
•(--►--):Control signal.

RS-B55/RS-955 RS-B55/RS-955

■ ELECTRICAL PARTS LIST

NOTES:

RESISTORS
- ERD .....Carbon
- ERG .....Metal-oxide
- ERS.....Metal-oxide
- ERO .....Metal-film
- ERX.....Metal-film
- ERQ .....Fuse type metallic
- ERC .....Solid
- ERF.....Cement

CAPACITORS
- ECBA .....Ceramic
- ECG□.....Ceramic
- ECKD□.....Ceramic
- ECCD□.....Ceramic
- ECFD□.....Ceramic
- ECQM.....Polyester film
- ECQE .....Polyester film
- ECQF .....Polypropylene
- ECE□ .....Electrolytic
- ECE□N ...Non polar electrolytic
- ECQS .....Polystyrene
- ECS□ .....Tantalum
- QCS .....Tantalum

Areas

* [M] For U.S.A.
* [E] For European areas except United Kingdom.
* [EK] For United Kingdom.
* [XA] For Asia, Latin America, Middle East and Africa.
* [XL] For Australia.
* [EGA] For F.R. Germany.
* [EH] For Holland.

REPLACEMENT PARTS LIST

Important safety notice
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

• RESISTORS

Ref. No.	Part No.	Value
R 1, 2	ERD25TJ223	22k
R 3, 4	ERD25TJ473	47k
R 5, 6	ERD25TJ273	27k
R 7, 8, 9, 10	ERD25FJ102	1k
R 11, 12	ERD25TJ154	150k
R 13	ERD25TJ124	120k
R 14	ERD25TJ224	220k
R 15, 16	ERD25FJ100	10
R 17, 18	ERD25FJ472	4.7k
R 19	ERD25FJ561	560
R 20	ERD25FJ472	4.7k
R 21, 22	ERD25TJ473	47k
R 23	ERD25TJ223	22k
R 24	ERD25FJ121	120
R 25, 26	ERD25TJ123	12k
R 27, 28	ERD25FJ101	100
R 29, 30	ERD25FJ102	1k
R 31, 32	ERD25FJ271	270
R 33, 34	ERD25TJ183	18k
R 35, 36	ERD25TJ824	820k
R 37, 38	ERD25TJ123	12k
R 39, 40	ERD25TJ225	2.2M
R 41, 42	ERD25TJ224	220k
R 43, 44	ERD25TJ183	18k
R 45	ERD25FJ103	10k
R 47, 48	ERD25FJ472	4.7k
R 101, 102	ERD25TJ183	18k
R 103, 104	ERD25FJ272	2.7k
R 105, 106	ERD25TJ103	10k
R 107, 108	ERD25FJ222	2.2k
R 109, 110	ERD25FJ822	8.2k
R 111	ERD25FJ222	2.2k
R 112, 113	ERD25TJ333	33k
R 114	ERD25TJ563	56k
R 119, 120	ERD25FJ472	4.7k
R 121, 122	ERD25FJ152	1.5k
R 123, 124	ERD25FJ390	39
R 125, 126	ERD25FJ103	10k
R 127, 128	ERD25FJ272	2.7k
R 129, 130	ERD25FJ392	3.9k
R 131, 132	ERD25FJ332	3.3k
R 134	ERD25FJ101	100
R 135 [E][EH][EGA][XA]	ERDS1FVJ470	47
R 135 [EK][XL]	ERG1ANJP470	47
R 136 [E][EH][EGA][XA]	ERDS1FVJ560	56
R 136 [EK][XL]	ERG1ANJP560	56
R 137, 138	ERD25FJ332	3.3k
R 139, 140	ERD25FJ562	5.6k
R 141, 142	ERD25FJ121	120
R 143, 144	ERD25FJ470	47
R 201	ERD25FJ272	2.7k
R 202	ERD25FJ101	100
R 203	ERD25TJ683	68k
R 204	ERD25TJ393	39k
R 205	ERD25FJ103	10k
R 206	ERD25TJ393	39k
R 207	ERD25TJ333	33k
R 208	ERD25FJ103	10k
R 209, 210, 211	ERD25TJ223	22k
R 212	ERD25TJ153	15k
R 213 [E][EH][EGA][XA]	ERD25FJ102	1k
R 213, 214 [EK][XL]	ERD25FJ151	150
R 215, 216	ERD25TJ223	22k
R 217	ERD25FJ103	10k
R 218	ERD25TJ333	33k
R 219	ERD25FJ103	10k
R 220	ERD25FJ101	100
R 221, 222	ERD25TJ183	18k
R 223	ERD25FJ103	10k
R 224	ERD25TJ333	33k
R 225	ERD25TJ183	18k
R 226	ERD25FJ103	10k
R 227	ERD25FJ332	3.3k
R 228	ERD25FJ562	5.6k
R 229 [EK][XL]	ERD25FJ122	1.2k
R 230	ERD25FJ562	5.6k
R 231	ERD25FJ681	680
R 232	ERD25FJ102	1k
R 233	ERD25TJ104	100k
R 234	ERD25TJ154	150k
R 235	ERD25FJ332	3.3k
R 236	ERD25FJ103	10k
R 237	ERD25TJ333	33k
R 238, 239	ERD25FJ103	10k
R 240	ERD25TJ563	56k
R 241, 242	ERD25FJ471	470
R 243	ERD25FJ103	10k
R 244	ERD25TJ223	22k
R 245	ERD25FJ103	10k
R 246	ERD25TJ223	22k
R 247	ERD25FJ103	10k
R 248	ERD25TJ223	22k
R 249	ERD25FJ391	390
R 250	ERD25FJ103	10k
R 251, 252	ERD25TJ223	22k
R 254	ERD25FJ103	10k
R 255	ERD25TJ684	680k
R 256	ERD25FJ471	470
R 257	ERD25FJ472	4.7k
R 258	ERD25FJ182	1.8k
R 259, 260	ERD25TJ104	100k
R 261, 262	ERD25FJ102	1k
R 263	ERD25FJ101	100
R 301	ERD25FJ1R0	1.0
R 302, 303	ERD25TJ223	22k
R 304, 305	ERD25FJ8R2	8.2
R 306	ERD25FJ222	2.2k
R 307	ERD25FJ392	3.9k
R 308	ERD25FJ272	2.7k
R 309	ERD25FJ182	1.8k
R 310	ERD25FJ152	1.5k
R 401, 402	ERD25FJ242	2.4k
R 403, 404	ERD25FJ562	5.6k
R 405, 406	ERD25FJ332	3.3k
R 407, 408	ERD25FJ102	1k
R 409, 410	ERD25TJ333	33k
R 411, 412	ERD25TJ823	82k
R 413, 414	ERD25FJ471	470
R 415, 416	ERD25FJ512	5.1k
R 417, 418	ERD25FJ682	6.8k
R 419, 420	ERD25FJ222	2.2k
R 421, 422	ERD25TJ823	82k
R 423, 424	ERD25FJ331	330
R 425, 426	ERD25FJ101	100
R 427, 428, 429, 430	ERD25TJ684	680k
R 502	ERD25TJ123	12k
R 503, 504	ERD25FJ102	1k
R 505, 506, 507, 508	ERD25TJ104	100k
R 510	ERD25FJ103	10k
R 511, 512	ERD25TJ563	56k
R 513, 514	ERD25TJ223	22k
R 515, 516	ERD25FJ332	3.3k
R 517, 518	ERD25TJ563	56k
R 519, 520	ERD25TJ153	15k
R 521, 522	ERD25FJ472	4.7k
R 523, 524	ERD25FJ822	8.2k
R 525, 526	ERD25FJ102	1k
R 527, 528	ERD25FJ103	10k
R 529, 530	ERD25TJ333	33k
R 531, 532	ERD25FJ151	150
R 533, 534	ERD25FJ472	4.7k
R 535, 536	ERD25TJ153	15k
R 537, 538	ERD25TJ154	150k
R 539, 540	ERD25TJ244	240k
R 541, 542	ERD25FJ472	4.7k
R 543, 544, 545, 546	ERD25TJ153	15k
R 547	ERD25FJ102	1k
R 549, 550	ERD25FJ332	3.3k
R 551, 552	ERD25TJ104	100k
R 553, 554	ERD25FJ102	1k
R 555, 556	ERD25FJ101	100
R 557, 558	ERD25FJ822	8.2k
R 559	ERD25FJ222	2.2k
R 560	ERD25TJ333	33k
R 561	ERD25TJ473	47k
R 562	ERD25FJ822	8.2k
R 563, 564	ERD25TJ153	15k
R 601, 602	ERD25FJ391	390
R 604, 605	ERQ14LKR20P	0.2
R 701, 702	ERD25TJ333	33k
R 703	ERD25FJ681	680
R 704	ERD25FJ331	330
R 705, 706	ERD25FJ181	180
R 707	ERD25TJ563	56k
R 709	ERD25FJ392	3.9k
R 710	ERD25FJ472	4.7k
R 712	ERD25FJ332	3.3k
R 713	ERD25TJ273	27k
R 714, 715, 716, 717	ERD25TJ333	33k
R 718	ERD25FJ103	10k
R 719	ERD25FJ181	180
R 720, 721, 722, 723	ERD25TJ333	33k
R 724	ERD25FJ331	330
R 725	ERD25TJ473	47k
R 901	ERDS2TJ102	1k
R 902	ERDS2TJ683	68k
R 903	ERDS2TJ393	39k
R 904	ERDS2TJ220	22
R 905, 906	ERDS2TJ102	1k
R 907	ERDS2TJ222	2.2k
R 908, 909	ERDS2TJ472	4.7k

• CAPACITORS

Ref. No.	Part No.	Value
C 1, 2	ECEA1EU4R7	4.7
C 3, 4	ECCD1H220K	22p
C 5, 6	ECEA1HU010	1
C 7, 8	ECCD1H101K	100p
C 9, 10	ECKD2H121KB	120p
C 11, 12	ECKD1H561KB	560p
C 13, 14	ECKD1H471KB	470p
C 15, 16	ECEA0JU470	47
C 17, 18	ECCD1H121K	120p
C 19, 20	ECQB1H392JZ	0.0039
C 21, 22	ECEA1HU010	1
C 23, 24	ECQM1H224JZ	0.22
C 25	ECEA0JU102	1000
C 26	ECEA1CU101	100
C 27, 28, 29, 30, 31	ECKD1H103ZF	0.01
C 101, 102, 103, 104	ECEA1CU100	10
C 105	ECEA0JU331	330
C 107, 108	ECQB1H183JZ	0.018
C 109, 110	ECKD1H102KB	0.001
C 111, 112, 113, 114	ECEA1HU010	1
C 115, 116	ECQB1H472JZ	0.0047
C 117, 118	ECQB1H822JZ	0.0082
C 119, 120	ECQB1H472JZ	0.0047
C 121, 122	ECEA1HUR33	0.33
C 123, 124	ECEA1AU471	470
C 125, 126	ECEA1CU100	10
C 127, 128	ECKD1H103ZF	0.01
C 201	ECFDD822KVY	0.0082
C 202	ECEA1CU100	10
C 203	ECCD1H470K	47p
C 204	ECEA1HU010	1
C 205	ECQB1H103JZ	0.01
C 206	ECEA1HUR47	0.47
C 207	ECEA1CU100	10
C 208	ECEA1EU3R3	3.3
C 209	ECEA1CU100	10
C 211, 212	ECEA1HU4R7	4.7
C 213	ECEA1CU220	22
C 301, 302	ECCD1H101K	100p
C 303	ECQP1153JZ	0.015
C 304	ECEA1HU4R7	4.7
C 305	ECFDD392KVY	0.0039
C 306	ECFDD472KVY	0.0047
C 307	ECFDD223KVY	0.022
C 308	ECFDD472KVY	0.0047
C 309	ECKD1H102KB	0.001
C 310 [EK][XL]	ECEA1HUR33	0.33
C 311	ECKD1H102KB	0.001
C 401, 402	ECCD1H820K	82p
C 403, 404	ECQB1H472JZ	0.0047
C 405, 406	ECEA1CU100	10
C 407, 408	ECQM1H473JZ	0.047
C 409, 410	ECQM1H224JZ	0.22
C 411, 412	ECEA50MR68R	0.68
C 413, 414	ECCB1H103JZ	0.01
C 415, 416	ECQB1H472JZ	0.0047
C 417, 418	ECEA1CU100	10
C 419, 420	ECQM1H473JZ	0.047
C 421, 422	ECQM1H224JZ	0.22
C 423, 424	ECEA50MR68R	0.68
C 425, 426	ECKD1H152KB	0.0015
C 427, 428	ECKD1H122KB	0.0012
C 502	ECEA1CU100	10
C 503, 504	ECEA1HUR22	0.22
C 505, 506	ECEA50MR68R	0.68
C 507, 508	ECCD1H471K	470p
C 509, 510	ECQB1H223JZ	0.022
C 511, 512	ECEA1CU100	10
C 513, 514	ECQM1H333JZ	0.033
C 515, 516	ECEA0JU470	47
C 517, 518, 519, 520	ECQM1H104JZ	0.1
C 521, 522	ECEA50MR33R	0.33
C 523, 524	ECCD1H391K	390p
C 525, 526	ECQB1H472JZ	0.0047
C 527, 528	ECQB1H223JZ	0.022
C 529, 530	ECQB1H332JZ	0.0033
C 531	ECEA1CU100	10
C 532	ECEA1HU010	1
C 533, 534	ECQB1H332JZ	0.0033
C 535, 536	ECEA1CU100	10
C 537, 538	ECCD1H331K	330p
C 539, 540	ECEA1HUR33	0.33
C 541, 542	ECEA1CU100	10
C 543, 544	ECCD1H181K	180p
C 601	ECEA1CU331	330
C 602	ECEA1CU102	1000
C 603, 604	ECKD1H103ZF	0.01
C 605	ECEA1CS332	3300
C 606	ECEA1CS222	2200
C 607	ECKD2H682PE	0.0068
C 608	ECEA1CU220	22
C 609 ⚠	ECKDKC103PFZ	0.01
C 702	ECCD1H221K	220p
C 703	ECEA1HU010	1
C 704	ECQM1H473JZ	0.047
C 705	ECQM1H104JZ	0.1
C 707	ECEA1CU100	10
C 708	ECKD1H333ZF	0.033
C 709, 710	ECQM1H104JZ	0.1
C 901	ECEA0JU101	100
C 902	ECEA1HU010	1
C 903	RCBS1H221KBY	220p

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description
IC 1	M5218L	IC
IC 2	M5219L	IC
IC 101, 102	AN6203	IC
IC 103	M5218L	IC
IC 201	M5218L	IC
IC 401, 402	TEA0665	IC
IC 501	AN6291	IC
IC 502	M5218P	IC
IC 701	LM6417E589	IC
IC 702, 703	AN6280	IC
IC 704	AN6870N	IC
IC 901	LM6417E1825	IC
IC 902	DN6838-S	IC

TRANSISTORS

Ref. No.	Part No.	Part Name & Description
Q 1, 2, 3	2SD1512R	Transistor
Q 4	2SA921-T	Transistor
Q 5, 6	2SD1468R	Transistor
Q 7, 8	2SK381D	Transistor
Q 9, 10	2SC2603EFG	Transistor
Q 101, 102	2SK381D	Transistor
Q 103, 104	2SJ40D	Transistor
Q 105	2SC2603EFG	Transistor
Q 107, 108	2SD1468R	Transistor
Q 109, 110, 111, 112	2SA1115E	Transistor
Q 113, 114, 115, 116	2SC2603EFG	Transistor
Q 201	2SC2603EFG	Transistor
Q 202	2SA1115E	Transistor
Q 203 [E][EH][EGA][XA][XL]	2SA1115E	Transistor
Q 203 [EK][XL]	2SB1030Q	Transistor
Q 204	2SA1115E	Transistor
Q 205, 206	2SC2603EFG	Transistor
Q 207	2SA1115E	Transistor
Q 208	2SC2603EFG	Transistor
Q 209, 210, 211, 212	2SA1115E	Transistor
Q 213	2SC2603EFG	Transistor
Q 301, 302	2SC2603EFG	Transistor
Q 303	2SD1468R	Transistor
Q 304	2SB1030Q	Transistor
Q 401, 402, 403, 404	2SA1115E	Transistor
Q 501, 502, 503, 504, 505, 506, 507, 508	2SC2603EFG	Transistor
Q 509, 510	2SD1424R	Transistor
Q 511, 512	2SA1115E	Transistor
Q 513	2SC2603EFG	Transistor
Q 601	2SD1265-0	Transistor
Q 602	2SB941-Q	Transistor
Q 701	2SC2603EFG	Transistor
Q 702	2SA1115E	Transistor
Q 901	2SD592A	Transistor
Q 902	2SB621A-R	Transistor
Q 903, 904	2SB1030Q	Transistor
Q 905	2SC3311Q	Transistor

DIODES & RECTIFIERS

Ref. No.	Part No.	Part Name & Description
D 1	1SS254	Diode
D 2	MA4051M	Zener
D 3	1SS254	Diode
D 101	1SS254	Diode
D 102	MA4051M	Zener
D 103, 105, 106, 107, 108	1SS254	Diode
D 201, 202, 203, 204, 205, 206	1SS254	Diode
D 208	MA4068M	Zener
D 209, 210, 211, 212, 213, 214, 215, 216	1SS254	Diode
D 501	SVDMC911	Diode
D 601, 602	⚠ MA4100M	Zener
D 603, 604, 605, 606, 607	⚠ SM112	Rectifier
D 701, 702, 703, 704, 705, 706, 707, 708	1SS254	Diode
D 710	LN31GCPHLMU	LED
D 711, 712, 713, 714, 715, 716	1SS254	Diode
D 718	1SS254	Diode
D 901	MA4068M	Zener
D 902, 903, 904, 905, 906, 907, 908, 909, 910	1SS133	Diode

VARIABLE RESISTORS

Ref. No.	Part No.	Part Name & Description
VR 1, 2	EWAPB1X05A54	Input Level Control
VR 3	EWAMF5X05G25	Balance Control
VR 5, 6	QVNB3A00B473	P.B.EQ. Gain Adj.
VR 101	QVNB3A00B222	dbx Adj.
VR 102	QVNB3A00B222	FL Meter Adj. (−40dB)
VR 103, 104	QVNB3A00B103	Overall Gain Adj.
VR 201	QVNB3A00B223	FL Meter Adj. (0dB)
VR 301, 302	QVNB3A00B104	Bias Current Adj.

COMBINATION PARTS

Ref. No.	Part No.	Part Name & Description
Z 701	EXBP86333J	Combination Part
Z 901	EXBF5E472J	Combination Part
Z 902	RVDDAN401	Combination Part

FL METER

Ref. No.	Part No.	Part Name & Description
FL 1	SADBG308ZK	FL Meter

IC PROTECTOR

Ref. No.	Part No.	Part Name & Description
ICP 201 [EK][XL]	SRUN5	IC Protector
ICP 601, 602 [EK][XL]	SRUN25	IC Protector
ICP 901 [EK]	RAHICPF20	IC Protector

COILS

Ref. No.	Part No.	Part Name & Description
L 1, 2	QLQX0343KWA	Bias Trap Coil
L 101, 102	QLQX2722D	Trap Coil
L 301	QLQX1011Y	Trap Coil
L 401, 402	QLM9Z10K	MPX Coil
L 403, 404	ELM7Q306A	Skewing Network
L 901	RLQZB2R2KT-D	Coil
T 301	SLO9C19K	Bias Oscillation Coil

TRANSFORMERS

Ref. No.	Part No.	Part Name & Description
T 1 [E][EH][EGA]	⚠ SLT5L225S	AC Power Transformer
T 1 [EK][XA][XL]	⚠ SLT5L235S	AC Power Transformer

SWITCHES

Ref. No.	Part No.	Part Name & Description
S 201	QSS1306H	Slide Switch (Timer)
S 601	⚠ ESB8215V	Power ON/OFF Switch
S 602 [EK][XA][XL]	⚠ SSR227	AC Voltage Selector
S 701, 702, 703, 704, 705	SSG13	Push Switch (Play/Pause/FF/REW/Stop)
S 706	SSG20-3	Push Switch (Rec)
S 707, 708	SSG13	Push Switch (Auto Rec Mute/Reset)
S 709, 710, 711	SSH492	Push Switch (B/C/dbx)
S 901, 902	RSH1B12ZA-U	Leaf Switch (FF/REW/PLAY)
S 904, 905, 906	RSH1A46ZA-U	Leaf Switch (Rec Inh./CrO_2/Metal)

JACKS

Ref. No.	Part No.	Part Name & Description
J 1	SJJ127HH	Microphones Jack
J 2	SJJ126B	Headphones Jack

CONNECTORS

Ref. No.	Part No.	Part Name & Description
CN 1	SJS5421	4 Pin Jumper Connector
CN 2	SJS5519	5 Pin Jumper Connector
CN 3	SJS5903	9 Pin Jumper Connector
CN 4	QJS1989S	10 Pin Jumper Connector
CN 5	SJT30342PH	3 Pin Plug
CN 6	SJT30542PH	5 Pin Plug
CN 7	QJT1090	Check Pin
CN 8	RJS1H1ZA	Plunger Socket

• Change of Part List (RS-955 from RS-B55)

Ref. No.	Change of Part No. RS-B55[E] → RS-955[M]		Description
C607	ECKD2H682PE	————	Capacitor
TI ⚠	SLT5L225S	SLT5L226S	AC Power Trasformer

NOTES:
- **S201** : Timer sw
- **S601** : Power C
- **S602** : AC pow [For [EK
- **S701** : Play swi
- **S702** : Pause sw
- **S703** : Fast forw
- **S704** : Rewind
- **S705** : Stop swi
- **S706** : Rec swit
- **S707** : Auto rec
- **S708** : Reset sw
- **S709~S711** : NR S71 S70
- **S901** : Play mo
- **S902** : FF/REW
- **S904** : Rec inhi
- **S905** : Auto tap
- **S906** : Auto tap
- Resistance are in specified otherwi 1K = 1,000(Ω), 1M
- Capacity are in m otherwise.
- All voltage values signal condition control at minimu
  ( ) ... Volta
  CrO_2 ..... Volta
  Metal .... Volta
  Stop ..... Volta
  For measurement

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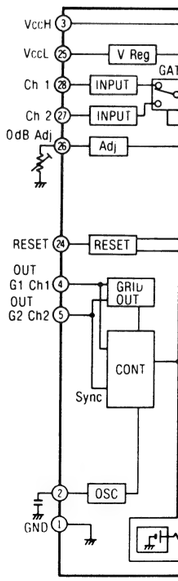

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Part No.	Value
RD25FJ102	1k
RD25FJ103	10k
RD25TJ333	33k
RD25FJ151	150
RD25FJ472	4.7k
RD25TJ153	15k
RD25TJ154	150k
RD25TJ244	240k
RD25FJ472	4.7k
RD25TJ153	15k
RD25FJ102	1k
RD25FJ332	3.3k
RD25TJ104	100k
RD25FJ102	1k
RD25FJ101	100
RD25FJ822	8.2k
RD25FJ222	2.2k
RD25TJ333	33k
RD25TJ473	47k
RD25FJ822	8.2k
RD25TJ153	15k
RD25FJ391	390
RQ14LKR20P	0.2
RD25TJ333	33k
RD25FJ681	680
RD25FJ331	330
RD25FJ181	180
RD25TJ563	56k
RD25FJ392	3.9k
RD25FJ472	4.7k
RD25FJ332	3.3k
RD25TJ273	27k
RD25TJ333	33k
RD25FJ103	10k
RD25FJ181	180
RD25TJ333	33k
RD25FJ331	330
RD25TJ473	47k
RDS2TJ102	1k
RDS2TJ683	68k
RDS2TJ393	39k
RDS2TJ220	22
RDS2TJ102	1k
RDS2TJ222	2.2k
RDS2TJ472	4.7k

Part No.	Value
CEA1CU100	10
CEA1EU3R3	3.3
CEA1CU100	10
CEA1HU4R7	4.7
CEA1CU220	22
CCD1H101K	100p
CQP1153JZ	0.015
CEA1HU4R7	4.7
CFDD392KVY	0.0039
CFDD472KVY	0.0047
CFDD223KVY	0.022
CFDD472KVY	0.0047

Ref. No.	Part No.	Value
C 309	ECKD1H102KB	0.001
C 310 [EK][XL]	ECEA1HUR33	0.33
C 311	ECKD1H102KB	0.001
C 401, 402	ECCD1H820K	82p
C 403, 404	ECQB1H472JZ	0.0047
C 405, 406	ECEA1CU100	10
C 407, 408	ECQM1H473JZ	0.047
C 409, 410	ECQM1H224JZ	0.22
C 411, 412	ECEA50MR68R	0.68
C 413, 414	ECCB1H103JZ	0.01
C 415, 416	ECQB1H472JZ	0.0047
C 417, 418	ECEA1CU100	10
C 419, 420	ECQM1H473JZ	0.047
C 421, 422	ECQM1H224JZ	0.22
C 423, 424	ECEA50MR68R	0.68
C 425, 426	ECKD1H152KB	0.0015
C 427, 428	ECKD1H122KB	0.0012
C 502	ECEA1CU100	10
C 503, 504	ECEA1HUR22	0.22
C 505, 506	ECEA50MR68R	0.68
C 507, 508	ECCD1H471K	470p
C 509, 510	ECQB1H223JZ	0.022
C 511, 512	ECEA1CU100	10
C 513, 514	ECQM1H333JZ	0.033
C 515, 516	ECEA0JU470	47
C 517, 518, 519, 520	ECQM1H104JZ	0.1
C 521, 522	ECEA50MR33R	0.33
C 523, 524	ECCD1H391K	390p
C 525, 526	ECQB1H472JZ	0.0047
C 527, 528	ECQB1H223JZ	0.022
C 529, 530	ECQB1H332JZ	0.0033
C 531	ECEA1CU100	10
C 532	ECEA1HU010	1
C 533, 534	ECQB1H332JZ	0.0033
C 535, 536	ECEA1CU100	10
C 537, 538	ECCD1H331K	330p
C 539, 540	ECEA1HUR33	0.33
C 541, 542	ECEA1CU100	10
C 543, 544	ECCD1H181K	180p
C 601	ECEA1CU331	330
C 602	ECEA1CU102	1000
C 603, 604	ECKD1H103ZF	0.01
C 605	ECEA1CS332	3300
C 606	ECEA1CS222	2200
C 607	ECKD2H682PE	0.0068
C 608	ECEA1CU220	22
C 609 ⚠	ECKDKC103PFZ	0.01
C 702	ECCD1H221K	220p
C 703	ECEA1HU010	1
C 704	ECQM1H473JZ	0.047
C 705	ECQM1H104JZ	0.1
C 707	ECEA1CU100	10
C 708	ECKD1H333ZF	0.033
C 709, 710	ECQM1H104JZ	0.1
C 901	ECEA0JU101	100
C 902	ECEA1HU010	1
C 903	RCBS1H221KBY	220p

Ref. No.	Part No.	Part Name & Description
INTEGRATED CIRCUITS		
IC 1	M5218L	IC
IC 2	M5219L	IC
IC 101, 102	AN6203	IC
IC 103	M5218L	IC
IC 201	M5218L	IC
IC 401, 402	TEA0665	IC
IC 501	AN6291	IC
IC 502	M5218P	IC
IC 701	LM6417E589	IC
IC 702, 703	AN6280	IC
IC 704	AN6870N	IC
IC 901	LM6417E1825	IC
IC 902	DN6838-S	IC
TRANSISTORS		
Q 1, 2, 3	2SD1512R	Transistor
Q 4	2SA921-T	Transistor
Q 5, 6	2SD1468R	Transistor
Q 7, 8	2SK381D	Transistor
Q 9, 10	2SC2603EFG	Transistor
Q 101, 102	2SK381D	Transistor
Q 103, 104	2SJ40D	Transistor
Q 105	2SC2603EFG	Transistor
Q 107, 108	2SD1468R	Transistor
Q 109, 110, 111, 112	2SA1115E	Transistor
Q 113, 114, 115, 116	2SC2603EFG	Transistor
Q 201	2SC2603EFG	Transistor
Q 202	2SA1115E	Transistor
Q 203 [E][EH] [EGA] [XA][XL]	2SA1115E	Transistor
Q 203 [EK][XL]	2SB1030Q	Transistor
Q 204	2SA1115E	Transistor
Q 205, 206	2SC2603EFG	Transistor
Q 207	2SA1115E	Transistor
Q 208	2SC2603EFG	Transistor
Q 209, 210, 211, 212	2SA1115E	Transistor
Q 213	2SC2603EFG	Transistor
Q 301, 302	2SC2603EFG	Transistor
Q 303	2SD1468R	Transistor
Q 304	2SB1030Q	Transistor
Q 401, 402, 403, 404	2SA1115E	Transistor
Q 501, 502, 503, 504, 505, 506, 507, 508	2SC2603EFG	Transistor
Q 509, 510	2SD1424R	Transistor
Q 511, 512	2SA1115E	Transistor
Q 513	2SC2603EFG	Transistor
Q 601	2SD1265-0	Transistor
Q 602	2SB941-Q	Transistor
Q 701	2SC2603EFG	Transistor
Q 702	2SA1115E	Transistor
Q 901	2SD592A	Transistor
Q 902	2SB621A-R	Transistor
Q 903, 904	2SB1030Q	Transistor
Q 905	2SC3311Q	Transistor
DIODES & RECTIFIERS		
D 1	1SS254	Diode
D 2	MA4051M	Zener
D 3	1SS254	Diode
D 101	1SS254	Diode
D 102	MA4051M	Zener
D 103, 105, 106, 107, 108	1SS254	Diode
D 201, 202, 203, 204, 205, 206	1SS254	Diode
D 208	MA4068M	Zener
D 209, 210, 211, 212, 213, 214, 215, 216	1SS254	Diode
D 501	SVDMC911	Diode
D 601, 602 ⚠	MA4100M	Zener
D 603, 604, 605, 606, 607 ⚠	SM112	Rectifier
D 701, 702, 703, 704, 705, 706, 707, 708	1SS254	Diode
D 710	LN31GCPHLMU	LED
D 711, 712, 713, 714, 715, 716	1SS254	Diode
D 718	1SS254	Diode
D 901	MA4068M	Zener
D 902, 903, 904, 905, 906, 907, 908, 909, 910	1SS133	Diode
VARIABLE RESISTORS		
VR 1, 2	EWAPB1X05A54	Input Level Control
VR 3	EWAMF5X05G25	Balance Control
VR 5, 6	QVNB3A00B473	P.B.EQ. Gain Adj.
VR 101	QVNB3A00B222	dbx Adj.
VR 102	QVNB3A00B222	FL Meter Adj. (−40dB)
VR 103, 104	QVNB3A00B103	Overall Gain Adj.
VR 201	QVNB3A00B223	FL Meter Adj. (0dB)
VR 301, 302	QVNB3A00B104	Bias Current Adj.
COMBINATION PARTS		
Z 701	EXBP86333J	Combination Part
Z 901	EXBF5E472J	Combination Part
Z 902	RVDDAN401	Combination Part
FL METER		
FL 1	SADBG308ZK	FL Meter
IC PROTECTOR		
ICP 201 [EK][XL]	SRUN5	IC Protector
ICP 601, 602 [EK][XL]	SRUN25	IC Protector
ICP 901 [EK]	RAHICPF20	IC Protector
COILS		
L 1, 2	QLQX0343KWA	Bias Trap Coil
L 101, 102	QLQX2722D	Trap Coil
L 301	QLQX1011Y	Trap Coil
L 401, 402	QLM9Z10K	MPX Coil
L 403, 404	ELM7Q306A	Skewing Network
L 901	RLQZB2R2KT-D	Coil
T 301	SLO9C19K	Bias Oscillation Coil
TRANSFORMERS		
T 1 [E][EH] [EGA] ⚠	SLT5L225S	AC Power Transformer
T 1 [EK] [XA][XL] ⚠	SLT5L235S	AC Power Transformer
SWITCHES		
S 201	QSS1306H	Slide Switch (Timer)
S 601 ⚠	ESB8215V	Power ON/OFF Switch
S 602 [EK][XA] [XL] ⚠	SSR227	AC Voltage Selector
S 701, 702, 703, 704, 705	SSG13	Push Switch (Play/Pause/FF/REW/Stop)
S 706	SSG20-3	Push Switch (Rec)
S 707, 708	SSG13	Push Switch (Auto Rec Mute/Reset)
S 709, 710, 711	SSH492	Push Switch (B/C/dbx)
S 901, 902	RSH1B12ZA-U	Leaf Switch (FF/REW/PLAY)
S 904, 905, 906	RSH1A46ZA-U	Leaf Switch (Rec Inh./CrO_2/Metal)
JACKS		
J 1	SJJ127HH	Microphones Jack
J 2	SJJ126B	Headphones Jack
CONNECTORS		
CN 1	SJS5421	4 Pin Jumper Connector
CN 2	SJS5519	5 Pin Jumper Connector
CN 3	SJS5903	9 Pin Jumper Connector
CN 4	QJS1989S	10 Pin Jumper Connector
CN 5	SJT30342PH	3 Pin Plug
CN 6	SJT30542PH	5 Pin Plug
CN 7	QJT1090	Check Pin
CN 8	RJS1H1ZA	Plunger Socket

• Change of Part List (RS-955 from RS-B55)

Ref. No.	Change of Part No. RS-B55[E] ➡ RS-955[M]		Description
C607	ECKD2H682PE	————	Capacitor
TI ⚠	SLT5L225S	SLT5L226S	AC Power Trasformer

NOTES:

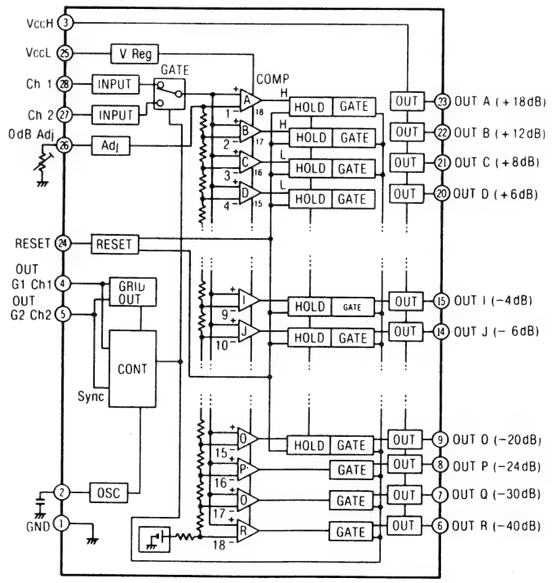
- **S201** : Timer switch in "OFF" position.
- **S601** : Power ON/OFF switch in "OFF" position.
- **S602** : AC power voltage selector. [For [EK] [XA] [XL] mark areas.]
- **S701** : Play switch in "OFF" position.
- **S702** : Pause switch in "OFF" position.
- **S703** : Fast forward switch in"OFF" position.
- **S704** : Rewind switch in "OFF" position.
- **S705** : Stop switch in "OFF" position.
- **S706** : Rec switch in "OFF" position.
- **S707** : Auto rec mute switch in "OFF" position.
- **S708** : Reset switch in "OFF" position.
- **S709∼S711** : NR select switch (S709 ▂: B, S710 ▂: C, S711 ▂: dbx, S709∼S711 ▁: OUT)
- **S901** : Play mode switch in "OFF" position.
- **S902** : FF/REW mode switch in "OFF" position.
- **S904** : Rec inhibit switch in "OFF" position.
- **S905** : Auto tape selector (for CrO_2 tape).
- **S906** : Auto tape selector (for Metal tape).
- Resistance are in ohms (Ω), 1/4 watt unless specified otherwise. 1K = 1,000(Ω), 1M = 1,000k(Ω)
- Capacity are in micro-farads (μF) unless specified otherwise.
- All voltage values shown in circuitry are under no signal condition and playback mode with volume control at minimum position otherwise specified.
  ( ) ... Voltage values at record mode.
  CrO_2 ..... Voltage values at CrO_2 tape mode.
  Metal .... Voltage values at Metal tape mode.
  Stop ..... Voltage values at Stop mode.
  For measurement use EVM.
- (———) indicates B (bias).
- (▒▒▒) indicates the flow of the playback signal.
- (▓▓▓) indicates the flow of the recording signal.
- Important safety notice
  Components indentified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
- The part No. of transistors, IC and diodes mentioned in the schematic diagram stand for production part No. Regarding the part No. with ✪ mark, the production part No. are different from the replacement part No. Therefore, when placing an order for replacement part, please use the part No. in the replacement part list.

*** Caution !**

IC and LSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.

- Cover the parts boxes made of plastics with aluminum foil.
- Ground the soldering iron.
- Put a conductive mat on the work table.
- Do not touch the legs of IC or LSI with the fingers directly.

EQUIVALENT CIRCUIT
IC 704: AN6870N



SPECIFICATIONS

* Input level control ...MAX
* Balance control.....Center

Playback S/N ratio * Test tape...QZZCFM	Greater than 45dB
Overall distortion * Test tape ...QZZCRA for Normal ...QZZCRX for CrO_2 ...QZZCRZ for Metal	Normal..... Less than 3.5%
Overall S/N ratio * Test tape...QZZCRA	Greater than 43dB (without NAB filter)

■ SCHEMATIC DIAGRAM

I MAIN CIRCUIT SECTION

II DOLBY NR CIRCUIT SECTION

III dbx CIRCUIT SECTION

IV VOLUME CIRCUIT SECTION

V AC POWER TRANSFORMER CIRCUIT SECTION

IC1 M5218L MIC AMP

IC2 M5219L PB EQ AMP

Q9,10 2SC3311Q LINE MUTE/ON

Q3 2SD1512R SWITCHING

Input Control

RECORD/PLAYBACK HEAD

Balance Control

Q1,2 2SD1512R REC/ON

Q4 2SA921T SWITCHING

D2 MA405IM

Q5,6 2SD1450R REC/ON

Q7,8 2SK330D 70μS/ON

D1,3 ISS254

Q303 2SD893A BIAS CONTROL

Bias Current Adj.

Q301,302 2SC3311Q BIAS OSC

ERASE HEAD

Erase Current Adj.

Erase Current Adj. Point (A)

Erase Current Adj. Point (B)

Q304 2SB1030Q BIAS/ON

D601,602 MA4100M

Q601 2SD1265O REGULATOR

Q602 2SB941Q REGULATOR

D603~606 ISR35200AT

P.B.Gain Adj.

IC401,402 TEA0665 DOLBY NR

Q401~404 2SA1309Q dbx/ON

dbx Adj.

D102 MA405IM

Q501,502 2SC3311Q SWITCHING

Q503,504 2SC3311Q SWITCHING

Q505,506 2SC3311Q SWITCHING

Q507,508 2SC3311Q SWITCHING

Q509,510 2SD1424 RMS FILTER

IC501 AN6291 dbx AMP

D501 SVDMC911

IC502 M5218L BUFFER AMP

Q511,512 2SA1309Q SWITCHING

Q513 2SC3311Q SWITCHING

Attack Recovery Time Adj.

IC201 M5218L M.S. AMP

D201~206 ISS254

Q201 2SC3311Q M.S/ON

Q202 2SA1309Q PLAY MUTING

Q203 2SA1309Q REC MUTING

Q204 2SA1309Q REC MUTING

Q205 2SC3311Q METER MUTING

Q206 2SC3311Q DIRECT MUTING

Q208 2SC3311Q SWITCHING

D208 MA4068M

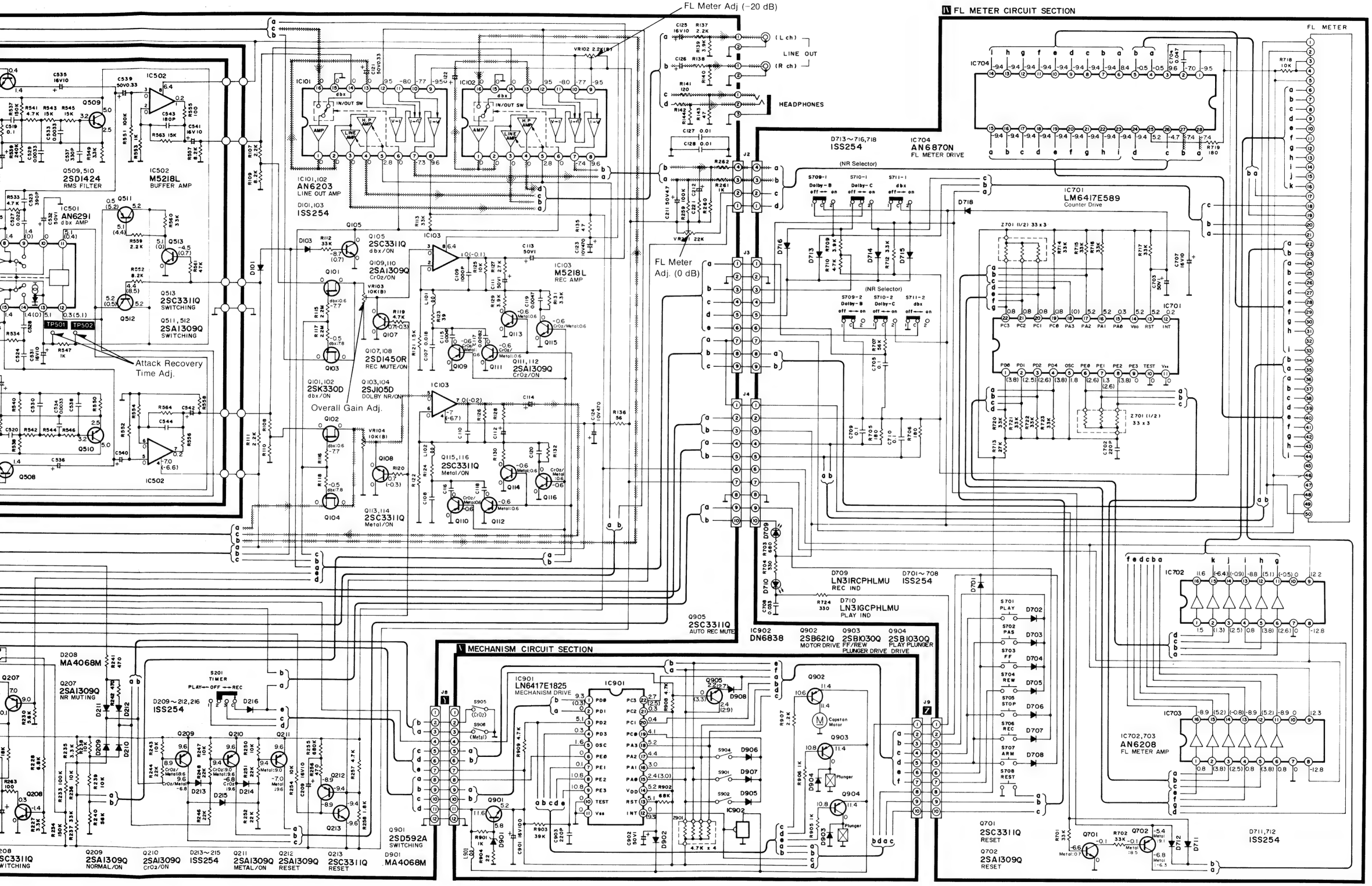
Q207 2SA1309Q NR MUTING

Q209 2SA1309Q NORMAL/ON

Q210 2SA1309Q CrO2/ON

D213~215 ISS254

10 11 12 13 14 15 16 17 18 19



■ CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM

I MAIN P.C.B.

III dbx P.C.B.

V MECHANISM P.C.B.

* (For [EK], [XL] mark areas.)

* (For [M], [E], [EH], [EGA], [XA] mark areas.)

* (For [EK], [XL] mark areas.)

* (For [EK], [XL] mark areas.)

* (For [EK], [XL] mark areas.)

* (For [M], [E], [EH], [EGA], [XA] mark areas.)

* (For [M], [E], [EH], [EGA], [XA] mark areas.)

* (For [M], [E], [EH], [EGA], [XA] mark areas.)

* (For [EK] mark areas)

* (For [M], [E], [XL], [XA], [EGA], [EH] mark areas)

TP301
Erase Current Adj.

Record/Playback Head

Erase Head

Motor

II DOLBY P.C.B.

* (For [EK], [XL] mark areas.)

* (For [EK], [XA], [XL] mark areas.)

* (For [M], [E], [EH], [EGA], mark areas.)

VI AC POWER TRANSFORMER P.C.B.

* (For [M], [E], [EH], [EGA], [XA] mark areas.)

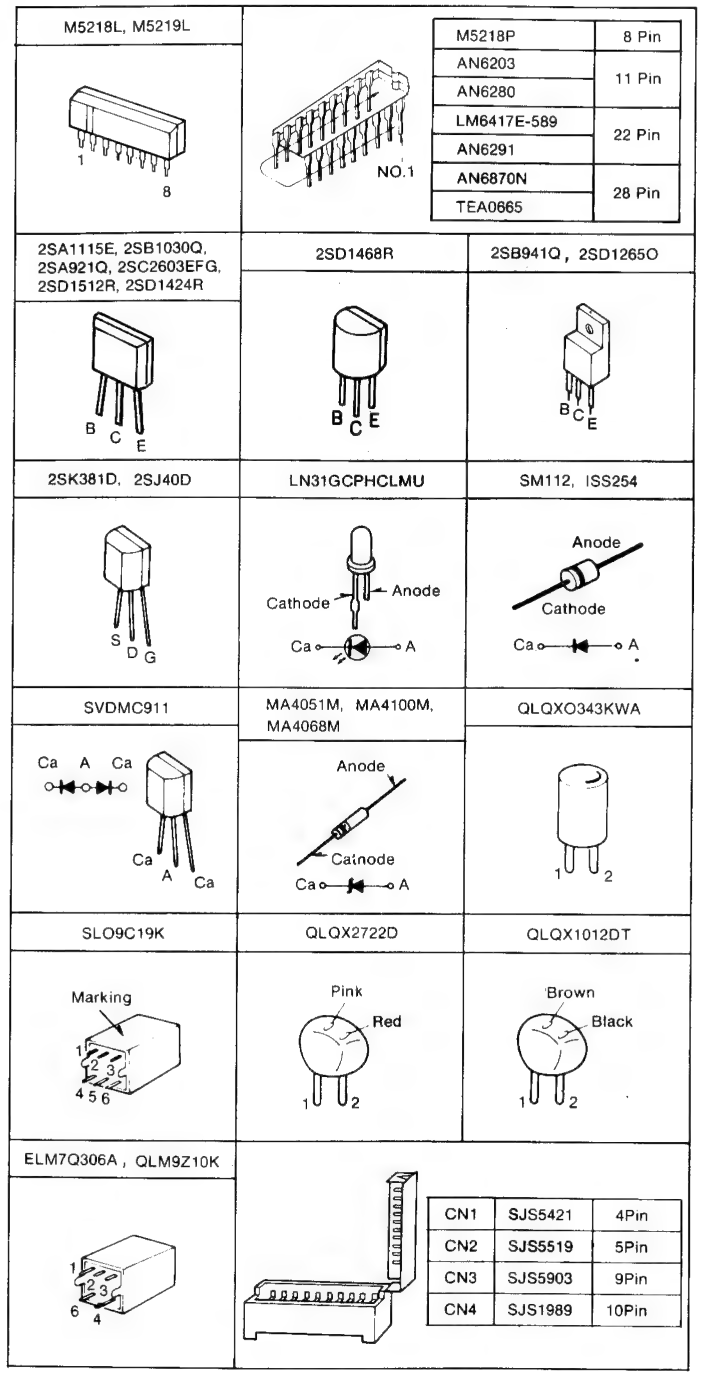
V MECHANISM P.C.B.

* (For [EK] mark areas.)

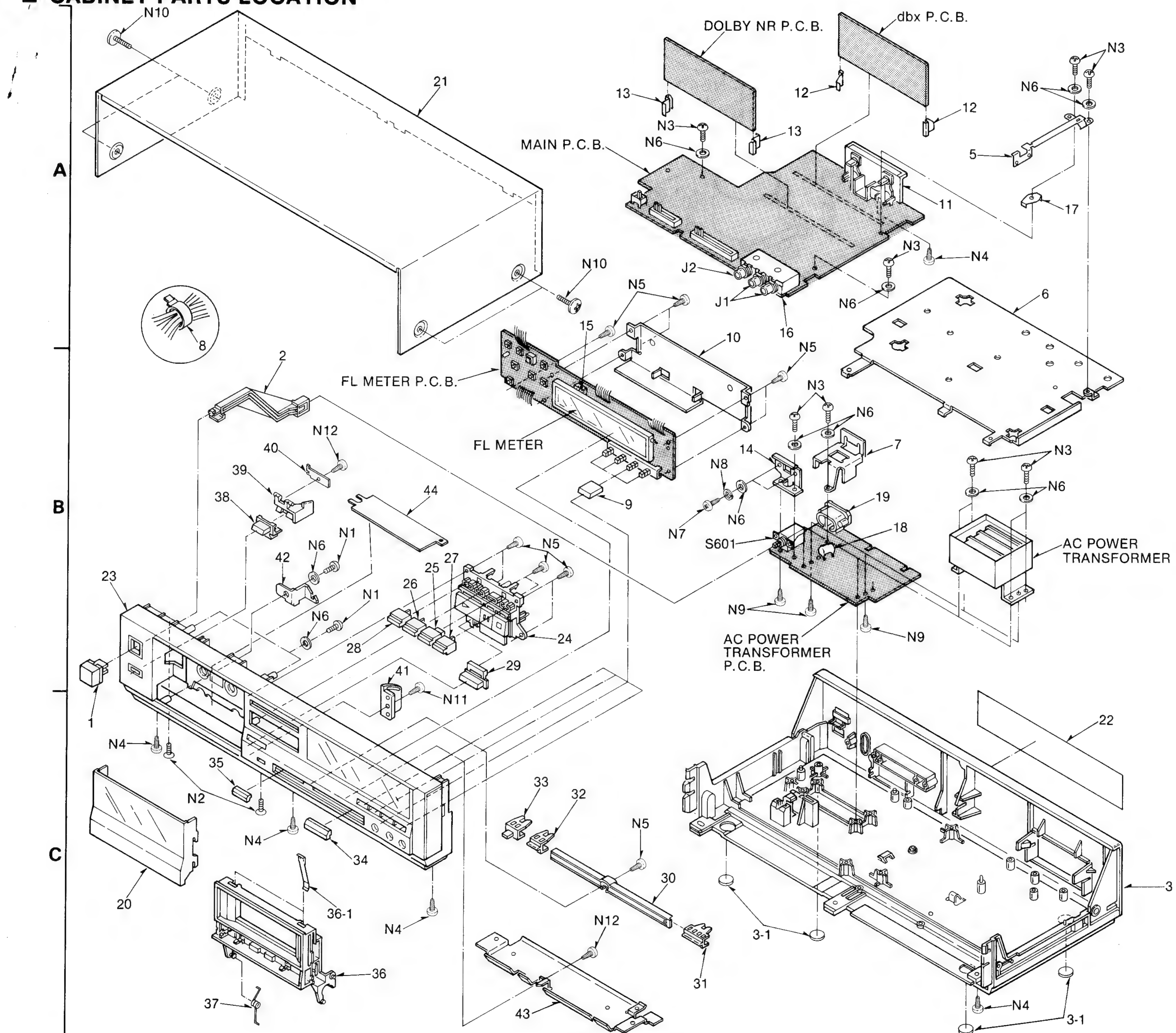
* (For [M], [E], [EH], [EGA], [XA], [XL], mark areas.)

IV FL METER P.C.B.

■ TERMINAL GUIDE OF TRANSISTORS, DIODES, COILS, AND IC'S



■ CABINET PARTS LOCATION



A	8 21 13 16 11 12 6 5 17
B	1 2 38 42 39 40 44 28 26 25 27 29 24 15 9 10 14 18 19 7
C	20 35 37 23 36 34 36-1 41 33 32 43 30 31 3-1 3 3-1 22

REPLACEM

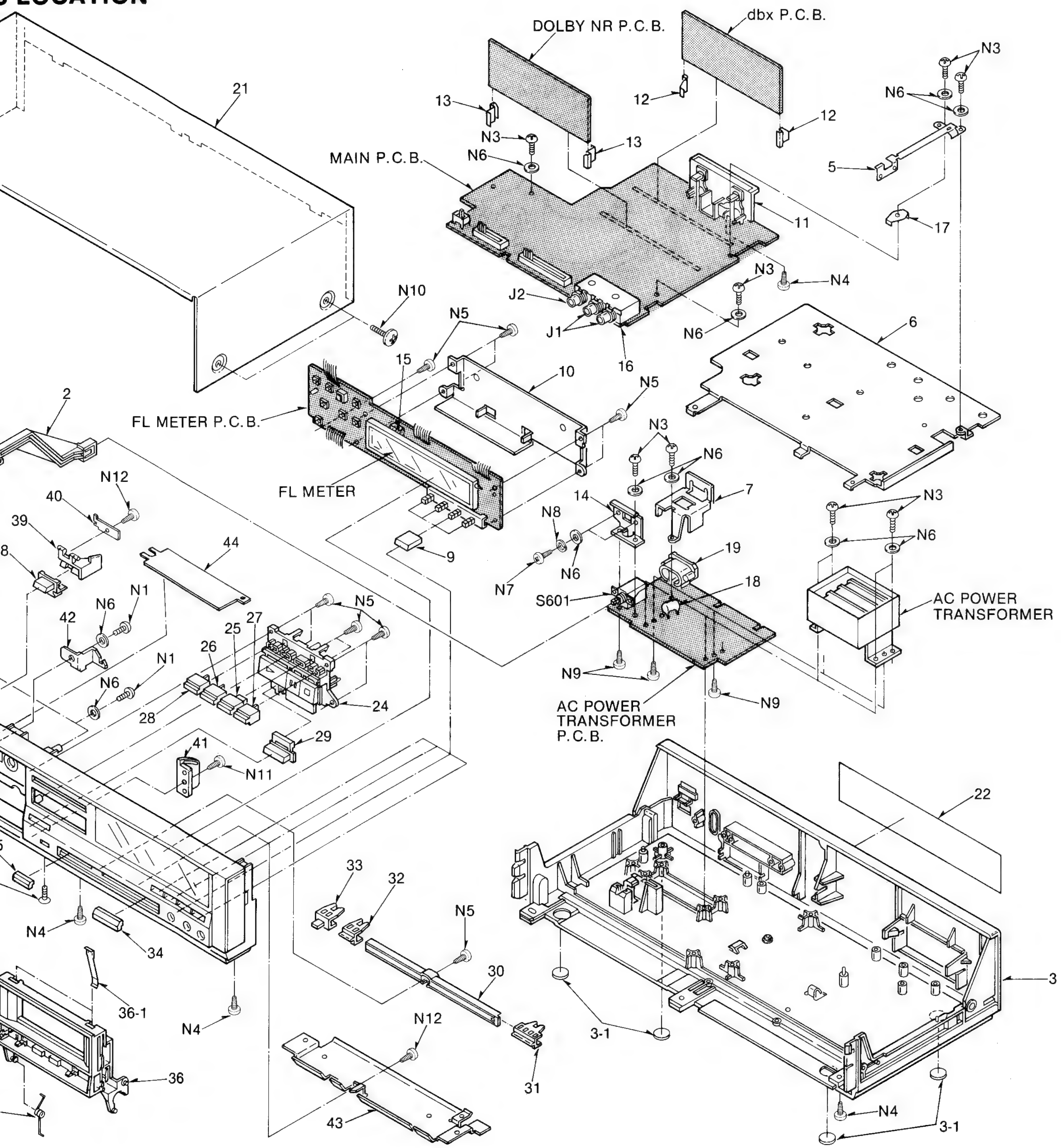
Important safety
Components ide
characteristics i
When replacing
only manufactur

Ref. No.	Pa
CABINET PA	
1	SBC6
2	SUB2
3 [E][EH] [EGA]	SKM
3 [EK] [XA][XL]	SKM
3-1	SKL2
5	SUS7
6	SMC
7	SMN
8	QTD1
9	SBC7 "Bla
9	SBC7 "Silv
10	SMN
11	QEJ5
12	SMN
13	SME
14	SMN
15	SHG
16	SMN
17	SNE5
18	△ SMX8
19 [E] [EK][EH] [EGA] [XA]	△ SJS9
19 [XL]	△ SJS9
20	SGE1 "Blac
20	SGE1 "Silve
21	SKC1 "Blac
21	SKC1 "Silve
22 [E][EH] [EGA]	SGT3
22 [EK]	SGT3
22 [XA]	SGT3
22 [XL]	SGT3

• Chang

Ref. No
CABIN
9
18
20
22
ACCES
A1
A2
PACK
P1

S LOCATION



21				13 16		11	12	6	5 17		
2 38 42 39 40	44 28 26 25 27 29 24	15 9	10	14	18 19 7						
35 37 23 36 34 36-1	41	33 32 43	30	31	3-1		3		3-1	22	

REPLACEMENT PARTS LIST

Important safety notice
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

Areas

* [M] For U.S.A.
* [E] For all European areas except United Kingdom.
* [EH] For Holland.
* [EK] For United Kingdom.
* [EGA] For F.R. Germany.
* [XL] For Australia.
* [XA] For Asia, Latin America, Middle East and Africa areas.

Ref. No.	Part No.	Part Name & Description
CABINET PARTS		
1	SBC666	Power Button
2	SUB237	Power Rod
3 [E][EH] [EGA]	SKMSB25-SE	Main Case
3 [EK] [XA][XL]	SKMSB25-SEK	Main Case
3-1	SKL294	Case Foot
5	SUS795	Earth Plate
6	SMC6377	Shield Plate
7	SMN1965-1	Holder Angle
8	QTD1315	Cord Clamper
9	SBC735-1 "Black Type"	Push Button
9	SBC735 "Silver Type"	Push Button
10	SMN1968	Strengthen Angle (B)
11	QEJ5039C	Jack Board
12	SMN1978	dbx P.C.B. Holder
13	SME103-4	Dolby P.C.B. Holder
14	SMN1974	Switch Angle
15	SHG6372	Meter Holder Cushion
16	SMN1970-1	Microphone Angle
17	SNE55-1	Earth Terminal
18 ⚠	SMX888	Spark Killer Cover
19 [E] [EK][EH] [EGA] [XA] ⚠	SJS9230	AC Inlet
19 [XL] ⚠	SJS9235	AC Inlet
20	SGE1761-1 "Black Type"	Cassette Lid Assembly
20	SGE1761-3 "Silver Type"	Cassette Lid Assembly
21	SKC1782K99-1 "Black Type"	Case Cover
21	SKC1782S98-1 "Silver Type"	Case Cover
22 [E][EH] [EGA]	SGT36211	Main Name Plate
22 [EK]	SGT36241	Main Name Plate
22 [XA]	SGT36221	Main Name Plate
22 [XL]	SGT36231	Main Name Plate
23	SGYSB55-KE "Black Type"	Front Panel Assembly
23	SGYSB55-SE "Silver Type"	Front Panel Assembly
24	SGXSB55-KE "Black Type"	Operation Chassis (B) Assembly
24	SGXSB55-SE "Silver Type"	Operation Chassis (B) Assembly
25	SBCSB25-SE	Record Button Assembly
26	SBC732-3 "Black Type"	Fast Forward Button
26	SBC732 "Silver Type"	Fast Forward Button
27	SBC732-1	Rec Mute Button
28	SBC732-4 "Black Type"	Rewind Button
28	SBC732-2 "Silver Type"	Rewind Button
29	SBC734-1 "Black Type"	Reset Button
29	SBC734 "Silver Type"	Reset Button
30	SGX7756-1 "Black Type"	Slide Guide
30	SGX7756 "Silver Type"	Slide Guide
31	SGX7757	Slider (A)
32	SGX7758	Slider (B)
33	SBD121	Timer Knob
34	SBD122	Volume Knob (A)
35	SBD123	Volume Knob (B)
36	SGXSB25-SE1	Cassette Holder Assembly
36-1	QBP2006A	Tape Pressure Spring
37	SUS796	Holder Spring
38	SBC736	Eject Button
39	SUB236	Eject Lever
40	SMN1971	Eject Spring
41	QYF0627A	Damper Gear Assembly
42	SMN1966	Holder Angle
43	SMN1969	Connection Angle
44	SMC6386	Shield Sheet
SCREWS, NUTS & WASHERS		
N 1	XTN3+10B	Tapping Screw ⊕3×10
N 2	XTS3+10B	Tapping Screw ⊕3×10
N 3	XTN3+12B	Tapping Screw ⊕3×12
N 4	XTB3+10BFZ	Tapping Screw ⊕3×10
N 5	XTB3+10BFN	Tapping Screw ⊕3×10
N 6	XWG3	Washer 3φ
N 7	XSN3+6S	Screw ⊕3×6
N 8	XWA3B	Washer 3φ
N 9	XTV3+6JFZ	Tapping Screw ⊕3×6
N 10	QHQ1324K "Black Type"	Ornament Screw
N 10	QHQ1324 "Silver Type"	Ornament Screw
N 11	XTB3+12BFN	Tapping Screw ⊕3×12
N 12	XSN26+8BN	Screw ⊕2.6×8
ACCESSORIES		
A 1 [E][EH] [XA][XL]	SQF12532	Instruction Book
A 1 [EK]	SQF12533	Instruction Book
A 1 [EGA]	SQF12534	Instruction Book
A 2 [E][EH] [EGA] ⚠	SFDAC05E02	AC Power Cord
A 2 [EK] ⚠	SFDAC05G02	AC Power Cord
A 2 [XA] ⚠	SJA168	AC Power Cord
A 2 [XL] ⚠	SJA173	AC Power Cord
A 3	QEB0125	Connection Cord
A 4 [XA] ⚠	SJP9215	AC Plug Adaptor
PACKINGS		
P 1 [E][EH] [EGA] [XA][XL]	SPG5352 "Black Type"	Carton Box
P 1 [E][EH] [EGA] [XA][XL]	SPG5351 "Silver Type"	Carton Box
P 1 [EK]	SPG5354 "Black Type"	Carton Box
P 1 [EK]	SPG5353 "Silver Type"	Carton Box
P 2	SPSM4	Cushion (R)
P 3	SPSM5	Cushion (L)
P 4	XZB50X65A02	Poly Bag
P 5	SPS4648-1	Spacer

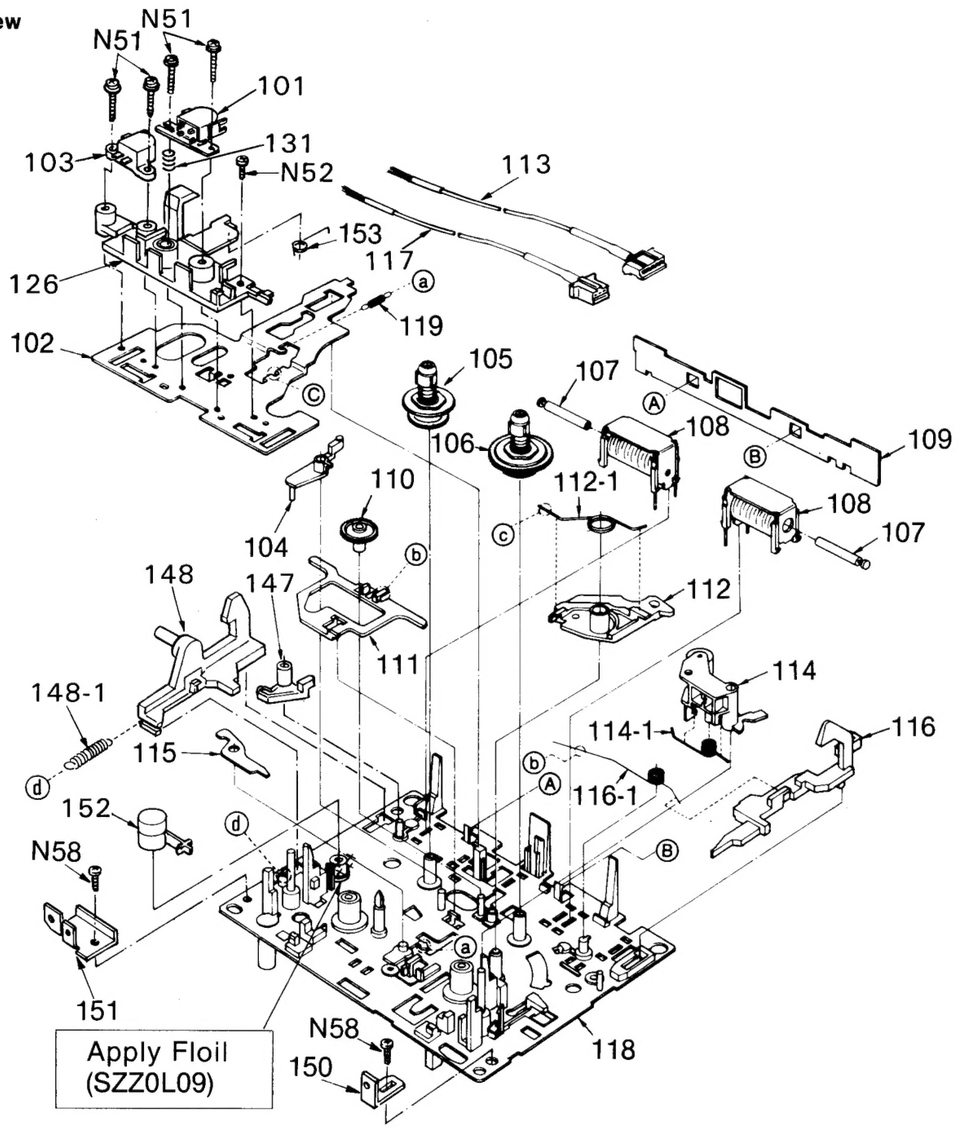
• Change of Part List (RS-955 from RS-B55)

Ref. No.	Change of Part No.		Description
	RS-B55[E] "Black Type"	➡ RS-955[M]	
CABINET PARTS			
9	SBC735-1	SBC735	Push Button
18 ⚠	SMX88	———	Spark Killer Cover
20	SGE1761-1	SGE1761-2	Cassette Lid Assembly
22	SGT36211	SGT35951	Main Name Plate
ACCESSORIES			
A1	SQF12532	SQF12447	Instruction Book
A2 ⚠	SFDAC05E02	SJA170	AC Power Cord
PACKING			
P1	SPG5352	SPG5341	Carton Box

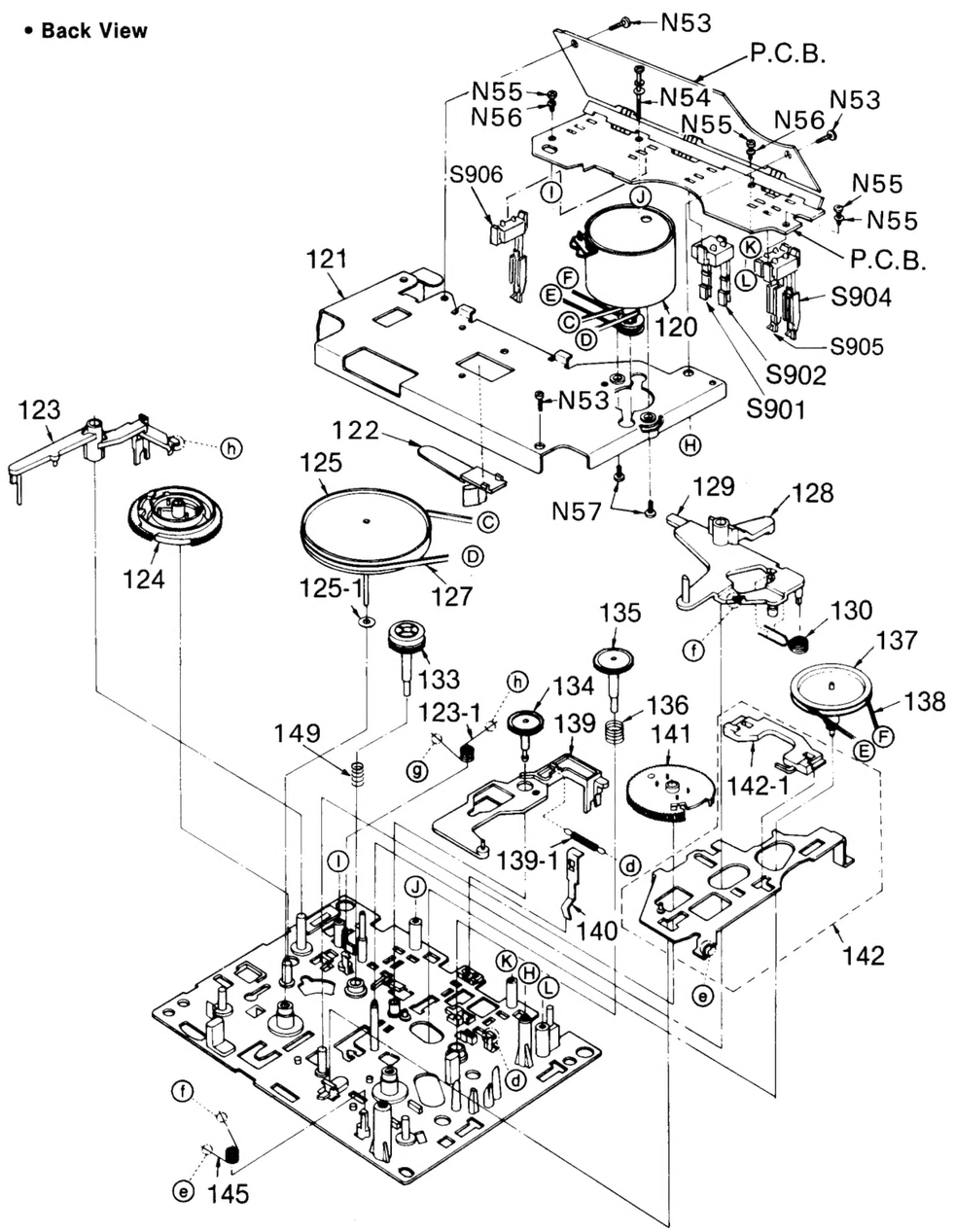
RS-B55/RS-955 RS-B55/RS-955

■ MECHANICAL PARTS LOCATION

• Front View



• Back View



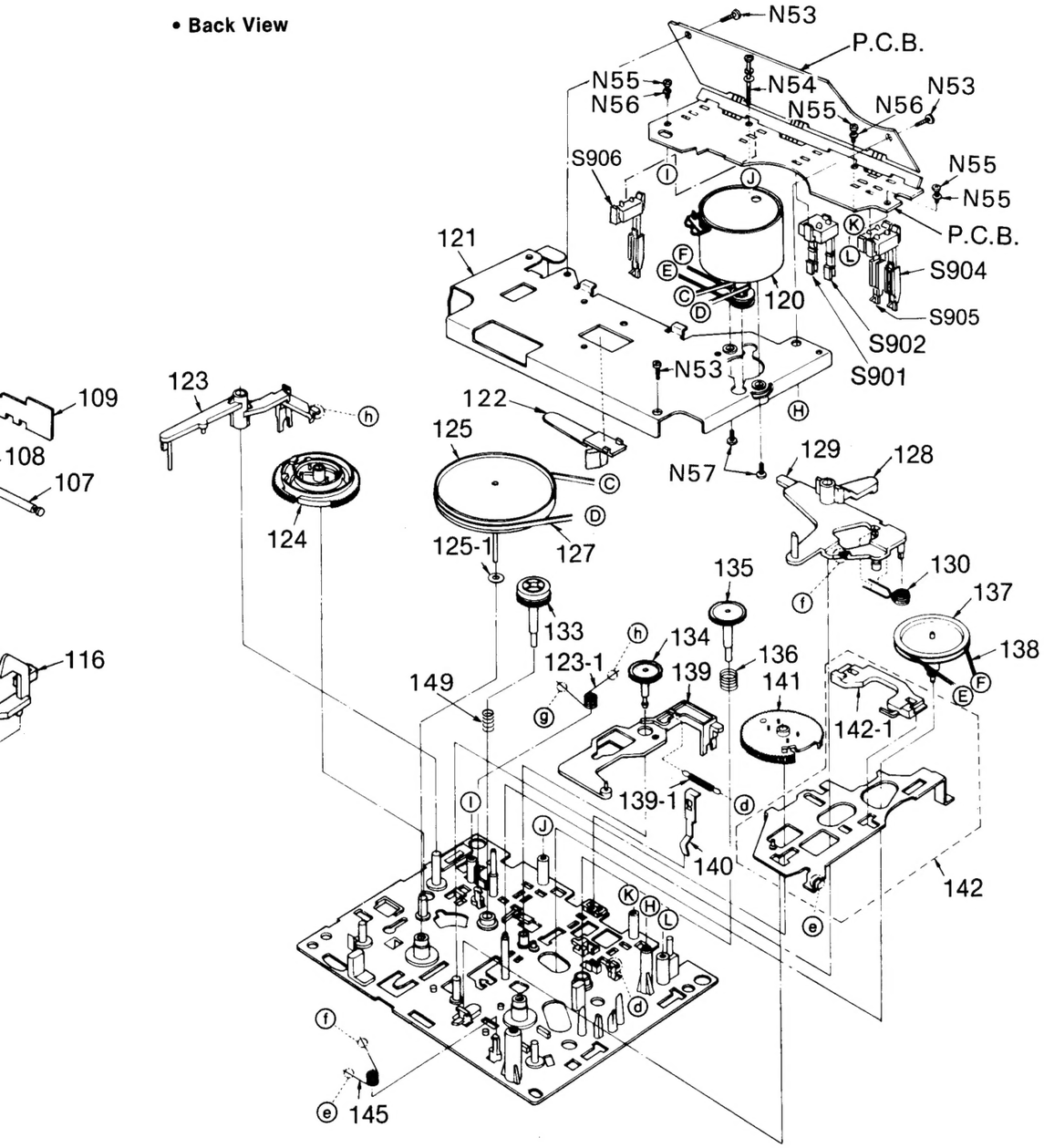
NOTES:

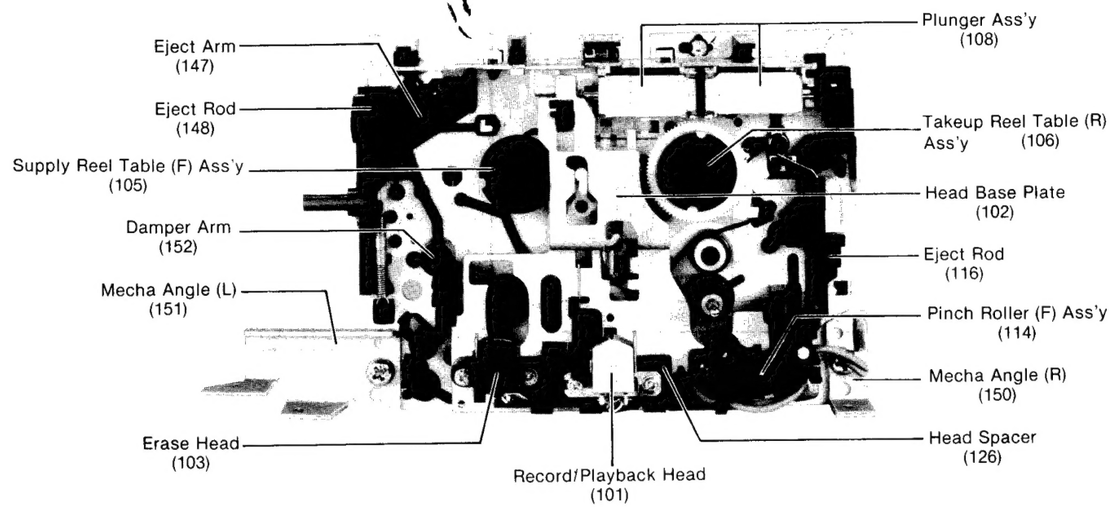
- When changing mechanism parts, apply the specified grease to the area marked "xx" shown in the drawing "Mechanical Parts Location".
- The grease and/or oil shown in the parentheses function to prevent friction (lubrication).

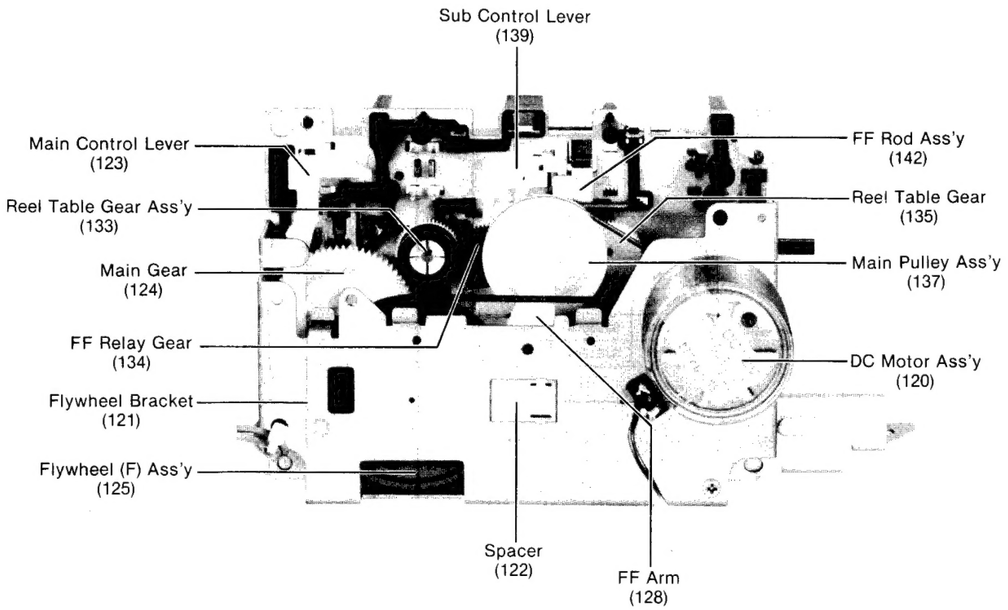
REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Name & Description
MECHANISM PARTS		
101	QWY4165G	Record/Playback Head
102	RUA9029Y	Head Base Plate
103	QWY2138G	Erase Head
104	RUB347Z	Take Up Change Arm
105	RDMG0011Z	Supply Reel Table (F) Ass'y
106	RDMG0001Z	Take Up Reel Table (R) Ass'y
107	RUB358Z	Shaft
108	RUEG0001Z	Plunger Ass'y
109	RUB344Z	Switch Lever
110	RDG5772Z	Take Up Relay Gear
111	RUB353Z	Brake Rod
112	RUBG0001Z	Main Lever Ass'y
112-1	RUW14Z	Main Lever Spring
113	RJSG0005Z	R/P Head Lead Wire
114	RUBG0006Z	Pinch Roller (F) Ass'y
114-1	RUW12Z	Pinch Roller Spring
115	RUB343Z	Cue Lever
116	RNR2Z	Eject Rod
116-1	RUW48Z	Eject Rod Spring
117	RJSG0006Z	E Head Lead Wire
118	RUAG0001Z	Mecha Chassis
119	RUD9Z	Head Base Plate Return Spring
120	RJQG0001Z	DC Motor Ass'y
121	RUL734Z	Flywheel, Bracket
122	RMD5004Z	Spacer
123	RUB350Z	Main Control Lever
123-1	RUW10Z	Main Control Lever Spring
124	RNG1Z	Main, Gear
125	RDWG0003Z	Flywheel (F) Ass'y
125-1	QBW2123	Washer (ø2.5)
126	RMD5006Z	Head Speser
127	RDV37Z	Main, Belt (Flat)
128	RUB346Z	FF Arm
129	RUB348Z	FF Spring Lever
130	RUW9Z	FF Arm Spring
131	SBC1278A	Spring
133	RDGG0003Z	Reel Table Gear Ass'y
134	RDG5773Z	FF Relay Gear
135	RDG5769Z	Reel Table Gear
136	RUQ10Z	Backtension Spring
137	RDRG0001Z	Main Pulley Ass'y
138	RDV27Z	FF, Belt (Square)
139	RUB349Z	Sub Control Lever
139-1	RUD8Z	Sub Control Lever Spring
140	RUS609Z	Tape Pressure Spring
141	RDG5775Z	Sub, Gear
142	RUBG0004Z	FF Rod Ass'y
142-1	RUB345Z	FR Selecte Rod
145	RUW8Z	FF Rod Spring
147	RNL3ZA	Eject Arm
148	RNR1Z	Eject Rod
148-1	RUD22Z	Eject Rod Spring
149	RUQ30ZA	Backtension Spring
150	SMN1972	Mecha Angle (R)
151	SMN1973	Mecha Angle (L)
152	RNL1Z	Damper Arm
153	RUW45Z	Takeup Arm Spring
SCREWS, NUTS & WASHERS		
N 51	QHQ1361A	Screw ⊕2×8
N 53	XTN26+6B	Screw ⊕2.6×6
N 54	XYC2+FF15	Screw ⊕2×15
N 55	XTN2+5B	Screw ⊕2×5
N 56	XWG2	Washer 2ϕ
N 57	XSN26+3	Screw ⊕2.6×3
N 58	XTN4+6B	Screw ⊕4×6

• **Back View**







Part Name & Description	Ref. No.	Part No.	Part Name & Description
Head Base Plate Return Spring	128	RUB346Z	FF Arm
DC Motor Ass'y	129	RUB348Z	FF Spring Lever
Flywheel, Bracket	130	RUW9Z	FF Arm Spring
Spacer	131	SBC1278A	Spring
Main Control Lever	133	RDGG0003Z	Reel Table Gear Ass'y
Main Control Lever Spring	134	RDG5773Z	FF Relay Gear
Main, Gear	135	RDG5769Z	Reel Table Gear
Flywheel (F) Ass'y	136	RUQ10Z	Backtension Spring
Washer (ϕ2.5)	137	RDRG0001Z	Main Pulley Ass'y
	138	RDV27Z	FF, Belt (Square)
Head Speser	139	RUB349Z	Sub Control Lever
Main, Belt (Flat)	139-1	RUD8Z	Sub Control Lever Spring

Ref. No.	Part No.	Part Name & Description
140	RUS609Z	Tape Pressure Spring
141	RDG5775Z	Sub, Gear
142	RUBG0004Z	FF Rod Ass'y
142-1	RUB345Z	FR Selecte Rod
145	RUW8Z	FF Rod Spring
147	RNL3ZA	Eject Arm
148	RNR1Z	Eject Rod
148-1	RUD22Z	Eject Rod Spring
149	RUQ30ZA	Backtension Spring
150	SMN1972	Mecha Angle (R)
151	SMN1973	Mecha Angle (L)

Ref. No.	Part No.	Part Name & Description
152	RNL1Z	Damper Arm
153	RUW45Z	Takeup Arm Spring

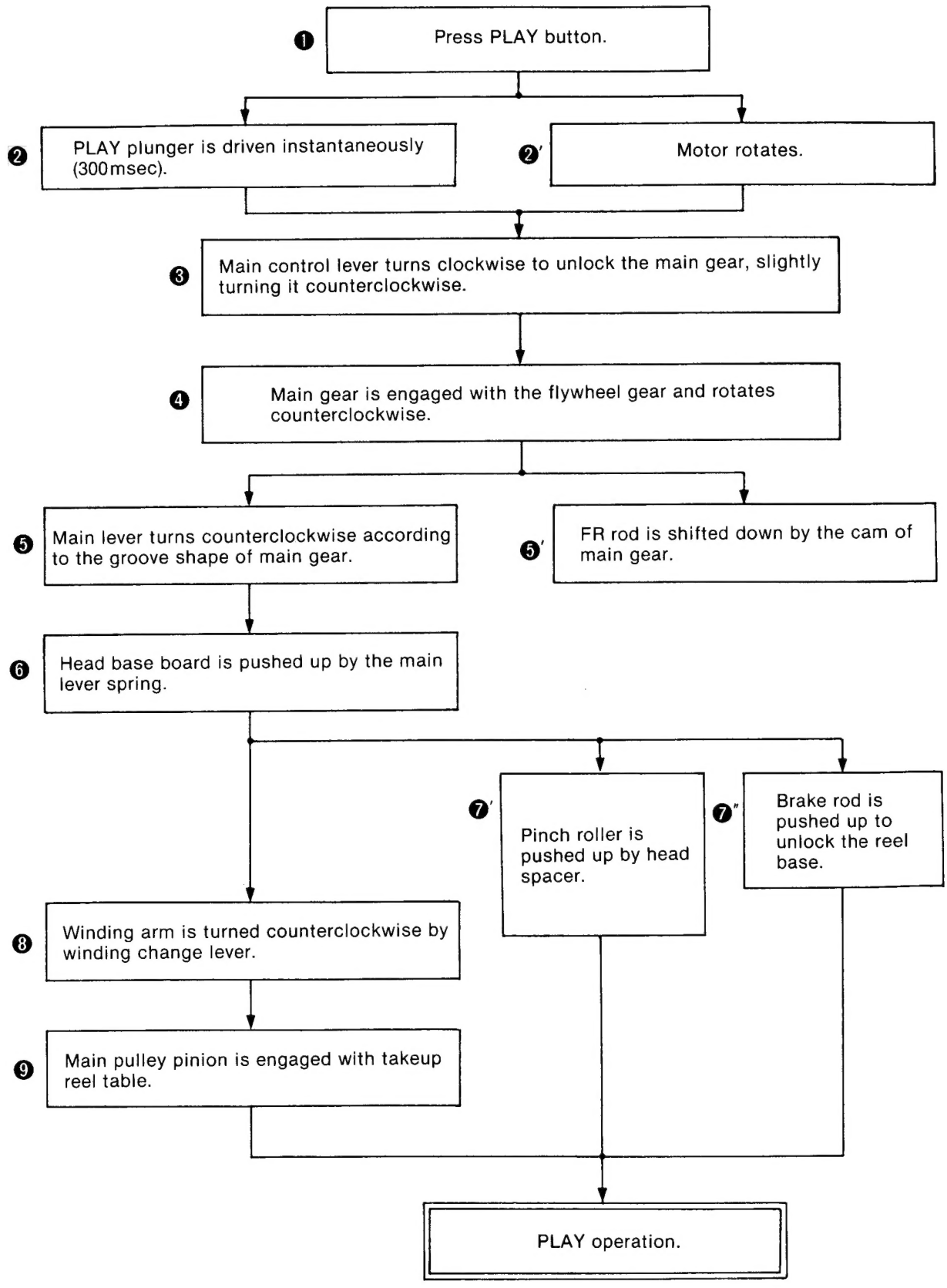
SCREWS, NUTS & WASHERS

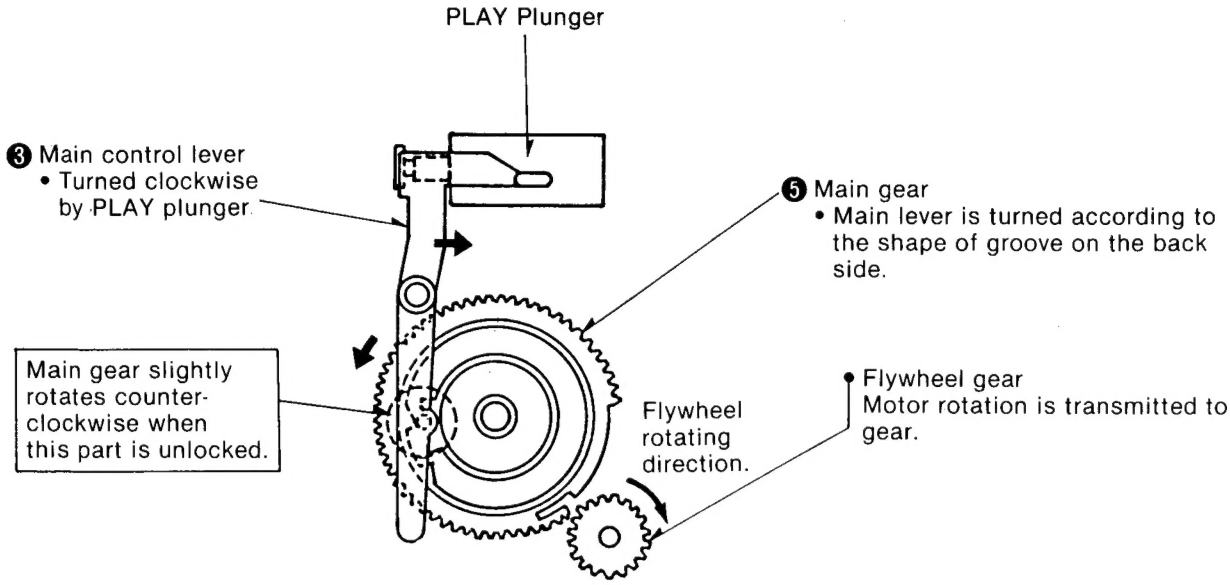
N 51	QHQ1361A	Screw ⊕2×8
N 53	XTN26+6B	Screw ⊕2.6×6
N 54	XYC2+FF15	Screw ⊕2×15
N 55	XTN2+5B	Screw ⊕2×5
N 56	XWG2	Washer 2ϕ
N 57	XSN26+3	Screw ⊕2.6×3
N 58	XTN4+6B	Screw ⊕4×6

■ MECHANICAL OPERATION (Description of mechanism operation)

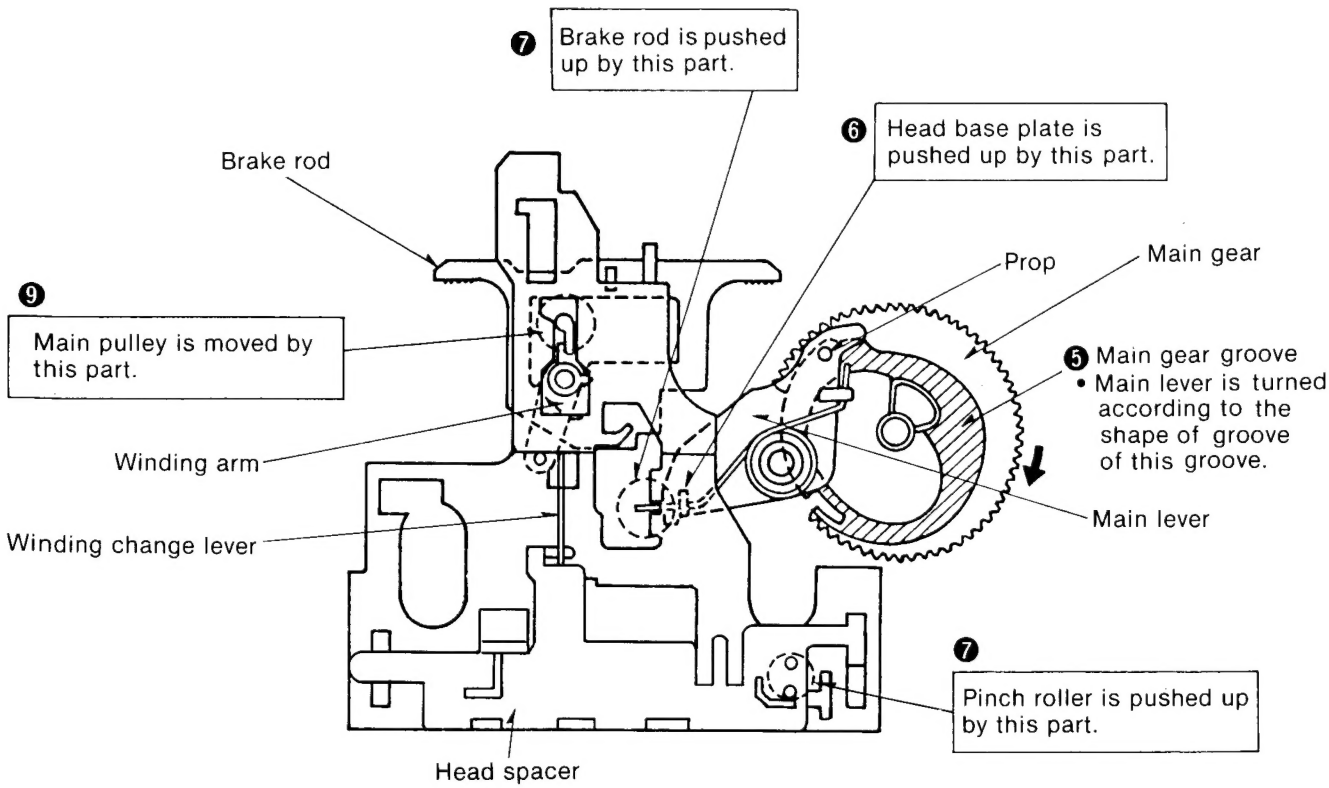
STOP → PLAY OPERATION

- Employed for this unit is the newly developed mechanism. The conventional mechanism (RS-8R series) used two motors (for capstan drive and head up/down operation), while this newly developed mechanism usess only one motor for capstan and head up/down operation. The basic operations (STOP → PLAY) of this mechanism are explained in the following. (For the mechanism operation, refer to next page.)





[Back view of mechanism in STOP mode.]



[Front view of mechanism in STOP mode.]